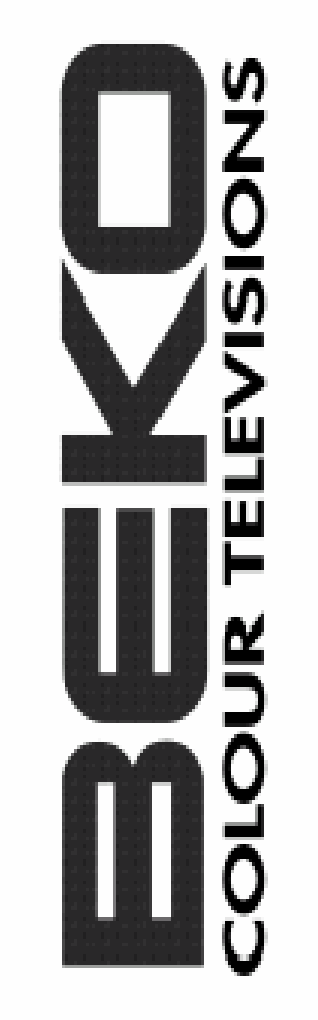
TOSHIBA

30WL46

MODEL

SERVICE MANUAL



L6B TFT- LCD TV

SERVICE MANUAL

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SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. It is advised to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. Always use the manufacturer's replacement safety components. The critical safety components marked with ∇ on the schematics diagrams should not be by other substitutes. Other substitute may create the electrical shock , fire or other hazards. Take attention to replace the spacers with the originals. Furthermore where a short circuit has occurred , replace those components that indicate evidence of overheating.
3. After servicing , see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long time of period of time , unplug the power cord of the Adaptor from the AC outlet.

Color TFT LCD Module is very sensitive both electrically and physically.Users, therefore, are requested to follow the "Guidance of handling color TFT LCD Module"on the followings.

1 -Be careful not to make scratch on the polarizer.

Surface of polarizer is soft and can be physically damaged easily.Please do not touch, push or rub polarizer surface with materials over HB hardness.

2 - Keep clean the surface.

Please wear rubber glove when touch the surface of LCD screen. Please use soft and anti-static material as cleaner.

3 -Keep out of water. Water on/in the LCD may cause electrical short or corrosion. Please wipe out dry or water carefully.

4 -Prevent swift Temperature & Humidity change. Instantaneous temperature and/or humidity change can make dew or ice which cause nonconformance such as malfunction.

5 - High temperature & high humidity reduce the life-time.

LCD is not proper to be used at high temperature and high humidity. Please keep specified temperature and humidity condition.

6 - Keep out of Corrosive Gas. Corrosive gas effect the polarizer and the circuit chemically and cause defects accordingly.

7 - Electrostatic discharge can make Damage

There are electro-static sensitive components such as CMOS in LCD Module. Please earth human body when handle the LCD.In addition, please do not touch the interface connector pin with bare.

8 - Do not operate for a long time under the same pattern

Operating LCD for a long time under the same pattern can cause image persistence and can damage it. Please follow following guidance.

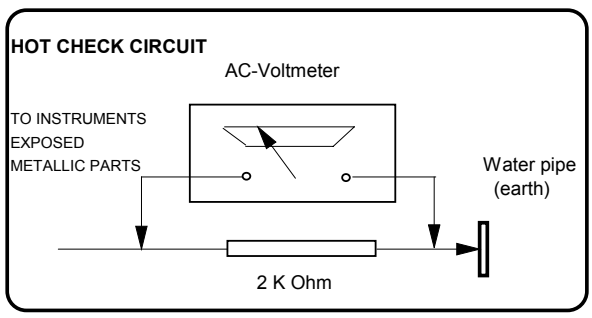
1. Turn the power off when do not use.
2. Change the pattern periodically.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs of the plug.
2. Turn the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver. When the exposed metallic part a return path to the chassis the reading should be between 4Mohm and the 20Mohm. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly in to the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2Kohm 10W resistor in series with an exposed metallic part on the receiver and an earth, such as a water pipe.
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed metallic part and check the voltage at the each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. The potential at the any point should not exceed 1.4 Vrms. In case a measurement is outside the limits specified , there is the possibility of a shock hazard , and the receiver should be repaired and rechecked before it is returned to the customer.



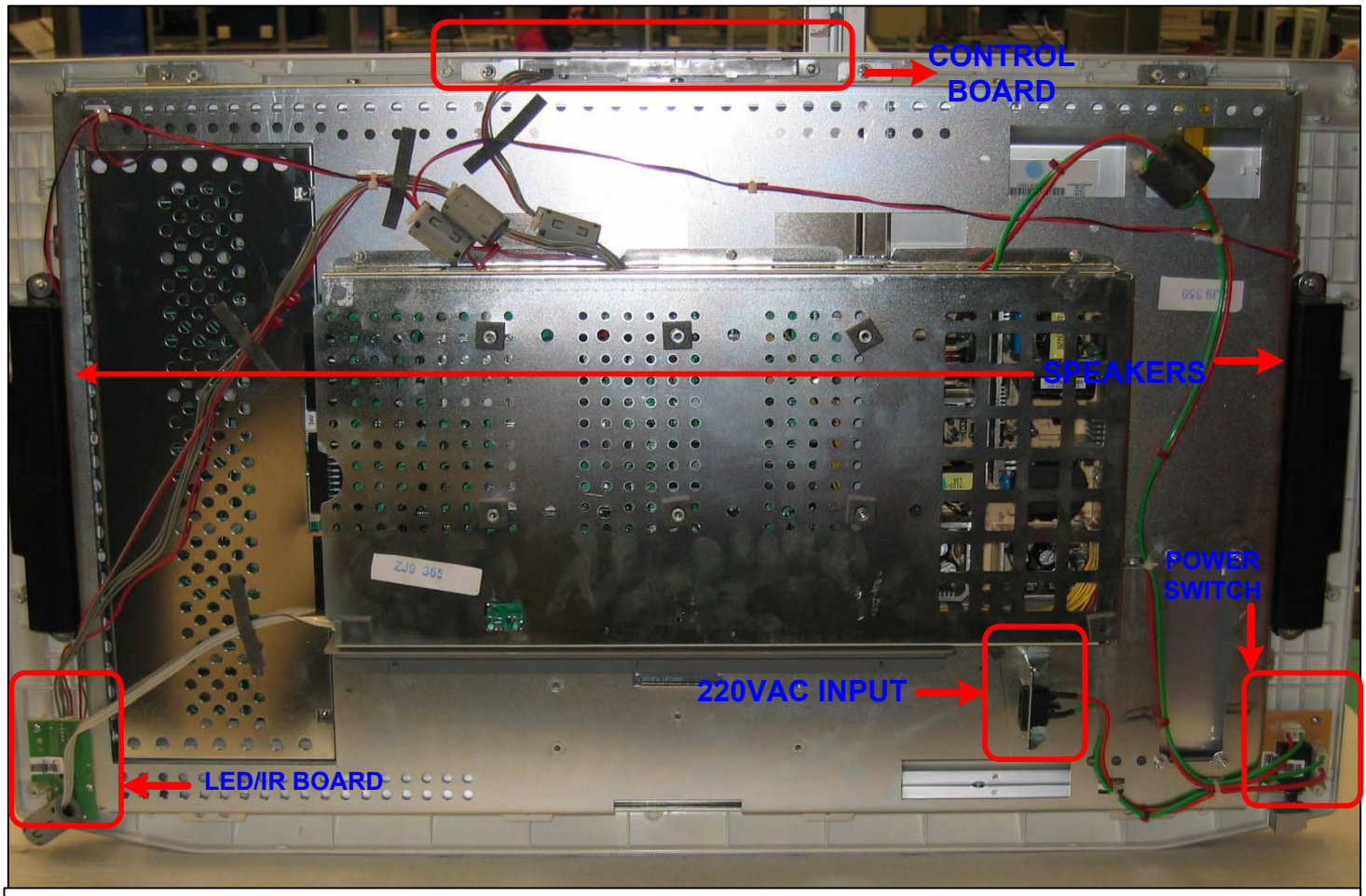
L6B TECHNICAL SPECIFICATION

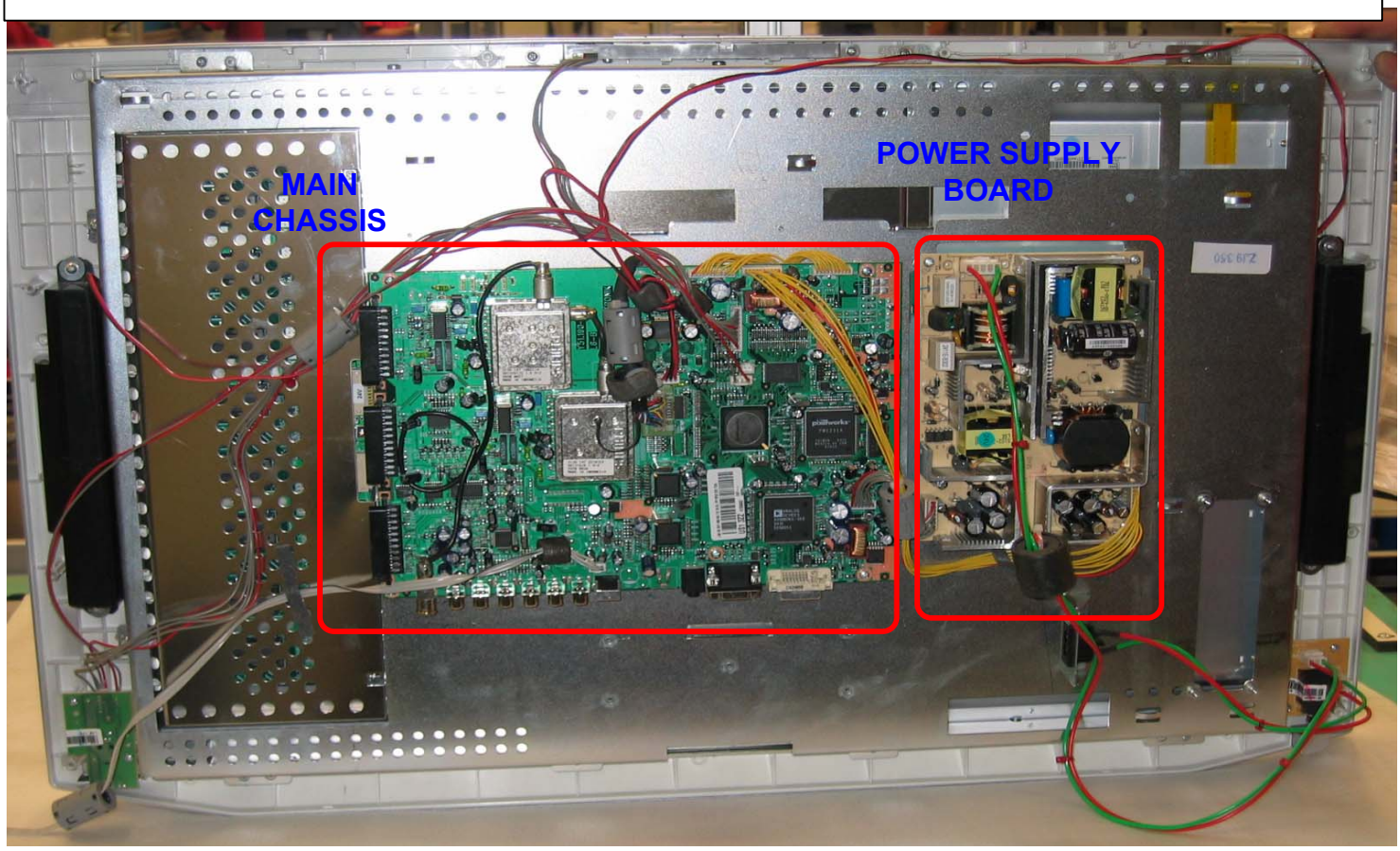
Receiving System		PAL B/G+I+D/K SECAM L/L'
Comb Filter		Adaptive 4H\2H
LTI, CTI Filters		+
DVI Receiver	**DVI 1.0 Compliant**	+
	Resolution	VGA to SXGA
	2 Pixel \ Clk Support	+
Gamma Correction		8 to 10-bit LUT
PIP\PAP\POP\PAT		+
OSD		Graphics Based 8-bit\pixel
Teletext	**Level (1.5, 2.5, Teleweb)**	Teletext 1.5
	Type (Fast\Top\Simple)	Simple, Fast, Top
	Page Memory	800p
WSS		+
VPS\PDC		+
Picture Formats (4:3, 16:9, 14:9, Panorama, LetterBox, Subtitle)	**4:3**	+
	16:9	+
	14:9	+
	Panorama	+
	Letterbox	+
	Subtitle	+
	Zoom	+
WSS (Wide Screen Signalling)		+
ATS (Automatic Tuning System)		Frequency Search
Manual Search		Channel Table Search
Number of Program Storage		+
No Ident Timer		+
Picture Freeze		+
Equalizer		+
AVL (Automatic Volume Level)		+
Sound Status Memory		+
Picture Status Memory		+
Swap		+
Child Lock		+
Program Lock		+
Picture Format Switching Tru Pin 8		+
Auto RGB Detect Tru Pin 16		+
Timer	**Off Timer (Sleep Timer)**	+
	On Timer	+
Picture Smart (User, Soft, Natural, Rich)		+
Sound Smart (User, Music, Sports, Cinema, Speech)		+
Scart2 Out Selectable		+
S-Video Input Through Scart2		+
Audio Output Power RMS in Max at 10% THD)		2x5W for 22"W, 23"W 2x10W for 26"W 2x10W for 30"W
Stereo (German A2, Nicam, BTSC)		German A2, Nicam
S-video In (DIN)	1	
AV In (3 RCA)	1	
AV Out (3 RCA)	1	
PC Audio (L, R)	1	
D-Sub 15	1	
Headphone	1	
CVBS In	4	
Y\C In	1	
DVI In	YES	
CVBS Out	4	

PANEL SPECIFICATION

Sizes	22"	23"	26"	27"	30"	32"
Manufacturer	**Samsung**	**Samsung LG-Philips Hannstar**	**Samsung LG-Philips AUO**	**Chimei**	**Chimei AUO LG-Philips**	
Interface	Single LVDS	Single LVDS	Singlel LVDS	Singel LVDS	Single LVDS	Single LVDS
Resolution	WXGA (1280x720)	WXGA (1280x768)	WXGA (1280x768)	WXGA (1280x720)	WXGA (1280x768)	WXGA (1280x768)
Brightness (cd/m2)>=	450	450	450	550	550	450
Contrast>=	500	400	400	600	600	700
Response Time (Tr+Tf) msec =<	25	25	25	25	25	23
Viewing Angle R\L\H\L>=	85/85 85/85	85/85 85/85	85/85/85/85	85/85/85/85	85/85/85/85	85/85/85/85
Adaptor İnput	15V	24V	Built-in TV	Built-in TV	Built-in TV	Built-in TV
PoweR consumptions	100W	100W	120W	120W	140W	180W
St-By Power Consumption	<4W	<4W	<4W	<4W	<4W	<4W
Input Range	100V-240V/50- 60Hz	100V-240V/50- 60Hz	100V-240V/50- 60Hz	100V-240V/50- 60Hz	100V-240V/50- 60Hz	100V-240V/50- 60Hz

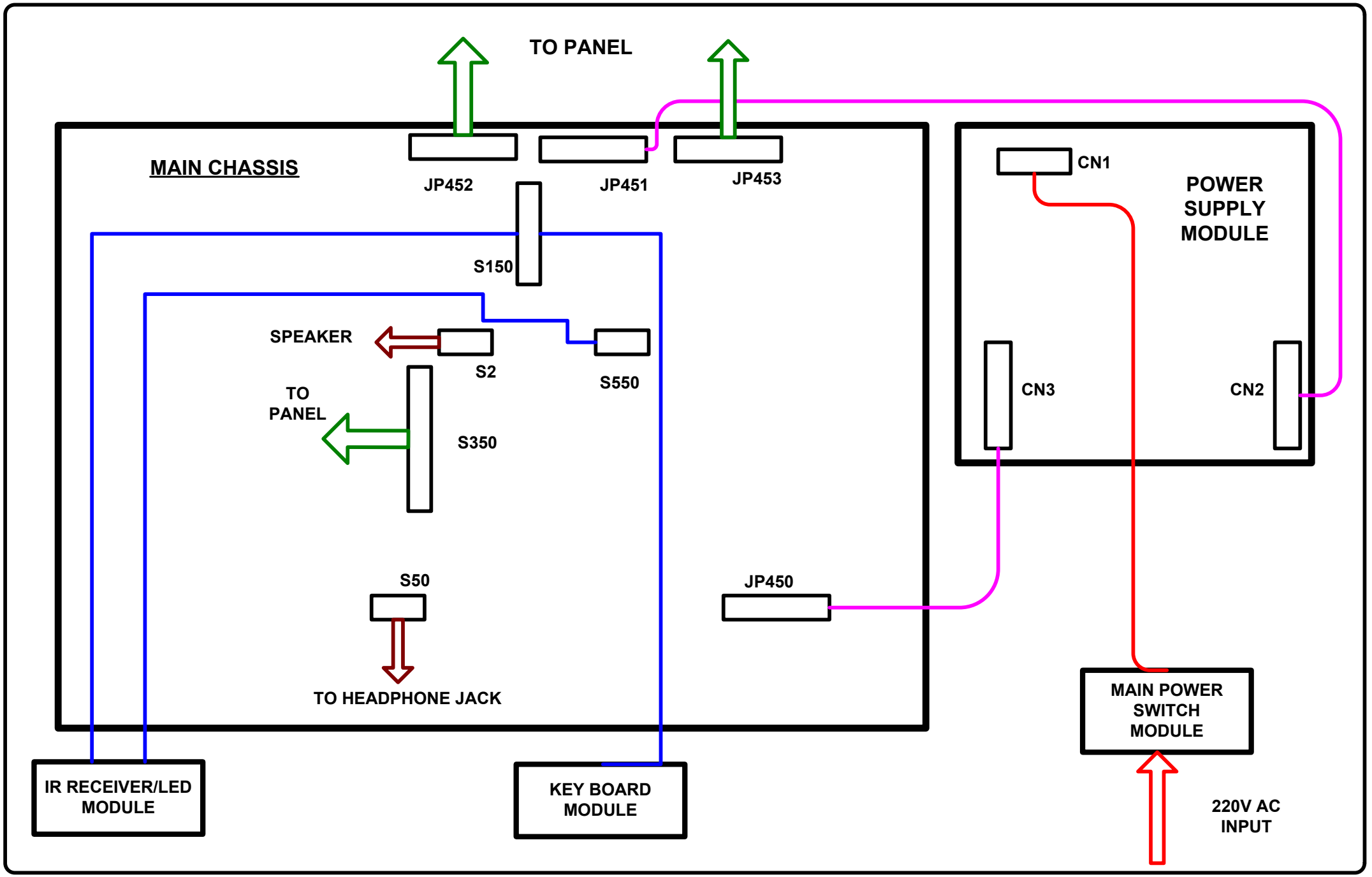
BACK SIDE APPEARANCES



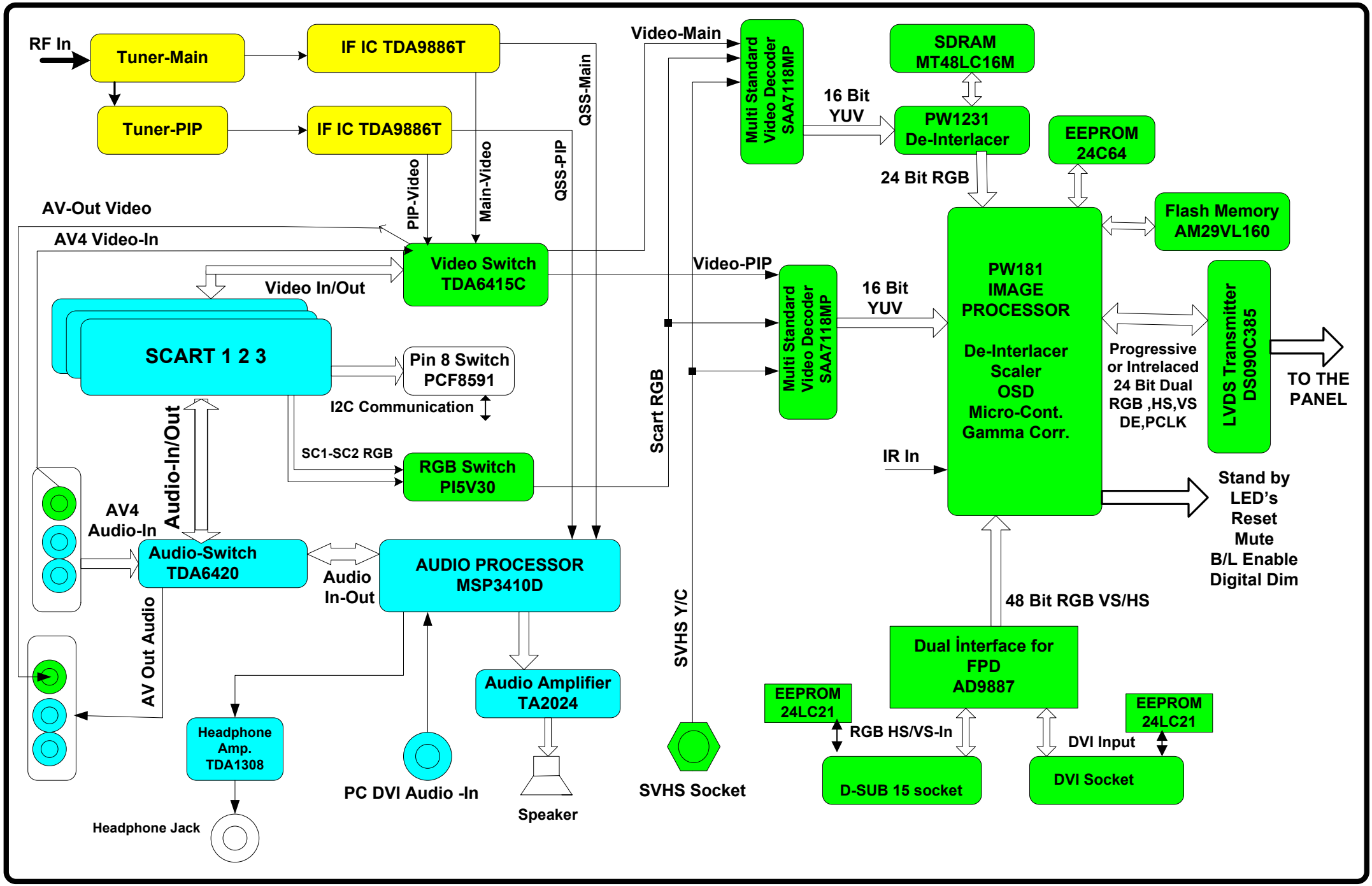


NOTE: LOCATION AND THE SHAPE OF IR /LED BAORD, CONTROL BOARD AND MAIN SWITCH BOARD MAY CHANGE ACCORDING TO THE COSMETIC OF THE TV AND SIZE

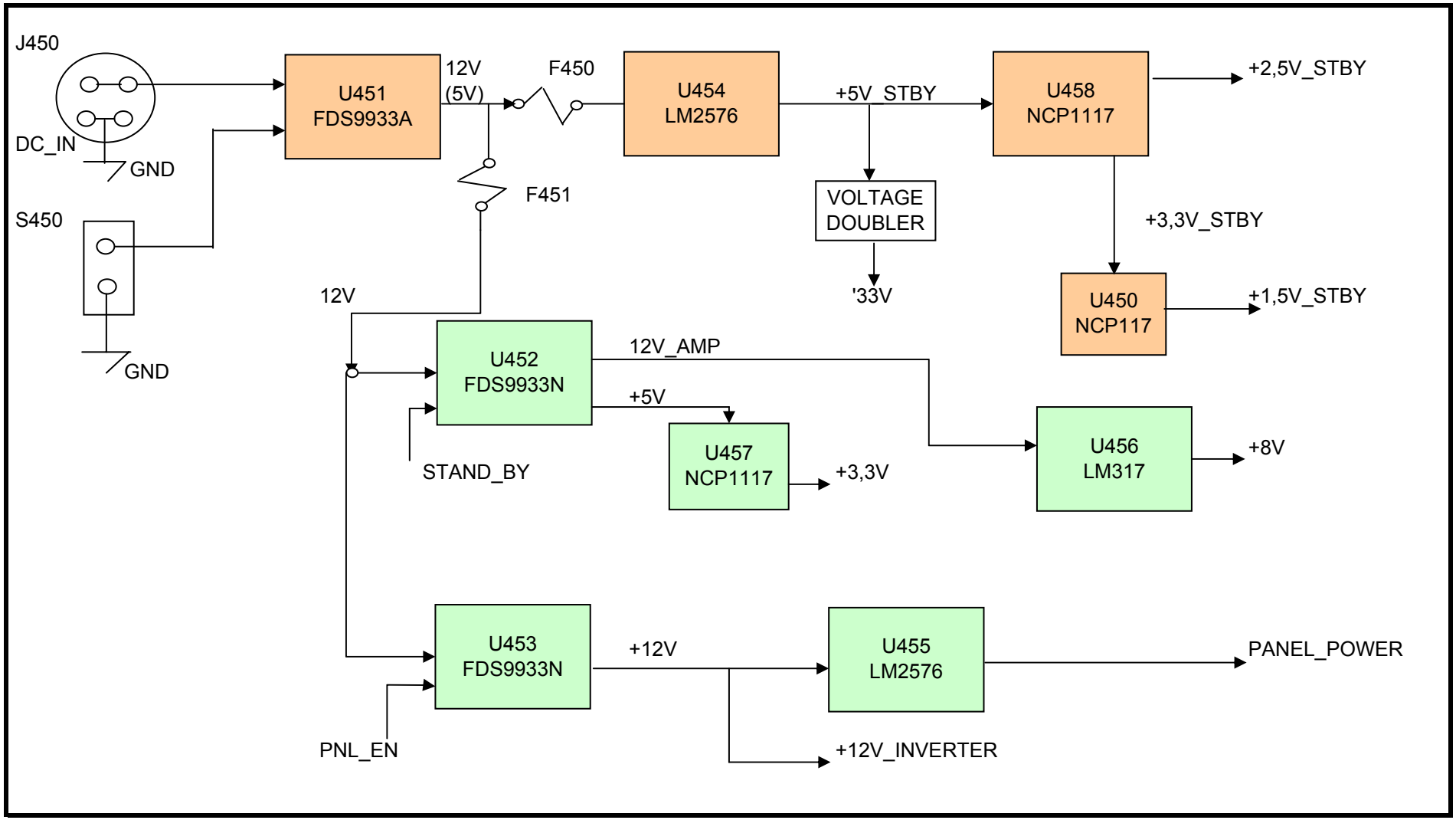
L6B CONNECTION DIAGRAM



L6B BLOCK DIAGRAM



L6B POWER SUPPLY BLOCK DIAGRAM (MAIN CHASSIS)



L6B SERVICE MENU

1. Activating the Service Menu

When the menu is on the screen press ‘9’, ‘3’, ’0’, ’1’ on the remote controller. This will activate the service menu.

2. Service Menu Structure

The service menu has three items: display, calibre and version

2.1 Display

Display item has seven options:

a- Panel
Panel option gives information about the current panel resolution. It is a read only option and can not be set.

b- Power on time
Power on time gives information about the last update time of the SW running. It is a read only option and can not be set.

c- Backlight on time
Backlight on time option reserved.

d- Scart prescale
Scart prescale option sets the prescale values for the input sounds entering the scart input of the MSP(Micronas Sound Processor). Changing this value you can adjust the level of the output sound going to loudspeakers for all the sources except the Tuners. The range is between 0 and 100.

e- nicam prescale
Nicam prescale option sets the prescale values for the Nicam standard sounds for tuner inputs. Changing this value you can adjust the level of the output sound going to loudspeakers for Nicam sounds entering the analog sound input of MSP. The range is between 0 and 100.

f- fm/am prescale
fm/am prescale option sets the prescale values for the FM/AM standard sounds for tuner inputs. Changing this value you can adjust the level of the output sound going to loudspeakers for FM/AM sounds entering the analog sound input of MSP. The range is between 0 and 100.

g- Agc(Automatic Gain Control) adjust
Agc adjust option sets the input voltage going to IF decoder AGC pin. Changing this value you can adjust this voltage for optimum Tuner performance. The range is between 0 and 31.

h- R/G/B Brightness/Contrast: These are used for color bias adjustment. The range is Between 0 and 255

2.2 Calibre

Calibre item has nine options:

a- video format
Video format option force the video format to the desired format. Selectable formats are Auto, Pal, NTSC and SECAM.

b- colorspace
Colorspace option gives the information about the video input colorspace input to PW181 IC. Do not change this value unless an error occurred in the colors displayed.

c- test pattern
This option activates the internal pattern of PW181 IC. There are 3 choices: none, vert bars, solid color. None will deactivate the internal pattern. Vert bars choice activates the bar pattern for the selected color component. Solid color activates the solid pattern with one color selected in color component and also you can change the level of the color by solid field level.

d- Color components:
This option selects the color for the internal pattern of PW181 IC. There are 4 choices: all, red, green and blue. If you choose all, you can see the white pattern and if you choose one of the other choices you can see the test pattern with the selected color.

e- solid field level
This option will adjust the level of the colors for the test pattern. The range is betwwen 1 and 64.

f- Initial ATS
This option will enable or disable the Initial setup for the TV. Setting this option to On, the TV will open from the Quick setup menu. Setting this option to Off will disable this option.

g- factory reset
Factory reset option executes a reset operation for the NVRAM. Pressing OK when this option is selected will erase the NVRAM and load default values to NVRAM.

h- dpms
This option selects the Power option for the TV. Setting this option to On the TV will switch to the last state for power on transition. Setting this to Off will disable this option and the TV will always switch to Stand-by state while power on transition.

i- osd timeout
This option sets the OSD timeout for the main menu structure. Selections are 5, 15 and 60 secs. The default is 60 sec.

2.3 Version

This item gives the information about the version of the software. Also you can see the last modified time for the GUI(graphical user interface).

L6 CHASSIS SERVICE MODE ITEMS

display menu

ITEM	TYPICAL VALUES/OPTIONS
panel	1280x768
power on time	03:39:45
back light time	03:39:45
scart prescale	25
nicam prescale	45
fm/am prescale	24
agc adjust	16
red brightness	128
red contrast	128
green brightness	128
green contrast	128
blue brightness	128
blue contrast	128

calibre menu

ITEM	TYPICAL VALUES/OPTIONS
video format	auto
color space	RGB
test pattern	none
color components	all
solid field level	33
initial ats	on
factory reset	press <ok> to reset
dpms	on
osd time out	60 sec

version

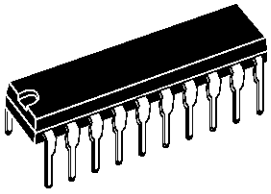
ITEM	TYPICAL VALUES/OPTIONS
Software	
	SL630T_CH1_T13 L6B 1.22 Chi30
GUI	
Project;	L6B Toshiba
Generated Date:	October 01,2004 at 22.42

SGS-THOMSON MICROELECTRONICS

TEA6415C

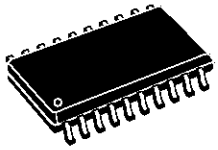
BUS-CONTROLLED VIDEO MATRIX SWITCH

- 20MHz BANDWIDTH
- CASCADABLE WITH ANOTHER TEA6415C (INTERNAL ADDRESS CAN BE CHANGED BY PIN 7 VOLTAGE)
- 8 INPUTS (CVBS, RGB, MAC, CHROMA, ...)
- 6 OUTPUTS
- POSSIBILITY OF MAC OR CHROMA SIGNAL FOR EACH INPUT BY SWITCHING-OFF THE CLAMP WITH AN EXTERNAL RESISTOR BRIDGE
- BUS CONTROLLED
- 6.5dB GAIN BETWEEN ANY INPUT AND OUTPUT
- -55dB CROSSTALK AT 5MHz
- FULLY ESD PROTECTED



DIP20
(Plastic Package)

ORDER CODE : TEA6415C



SO20
(Plastic Micropackage)

ORDER CODE : TEA6415CD

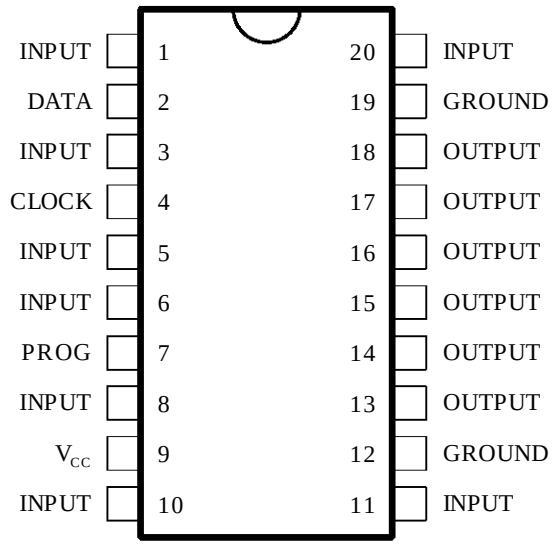
DESCRIPTION

The main function of the TEA6415C is to switch 8 video input sources on the 6 outputs.

Each output can be switched to only one of the inputs whereas but any same input may be connected to several outputs.

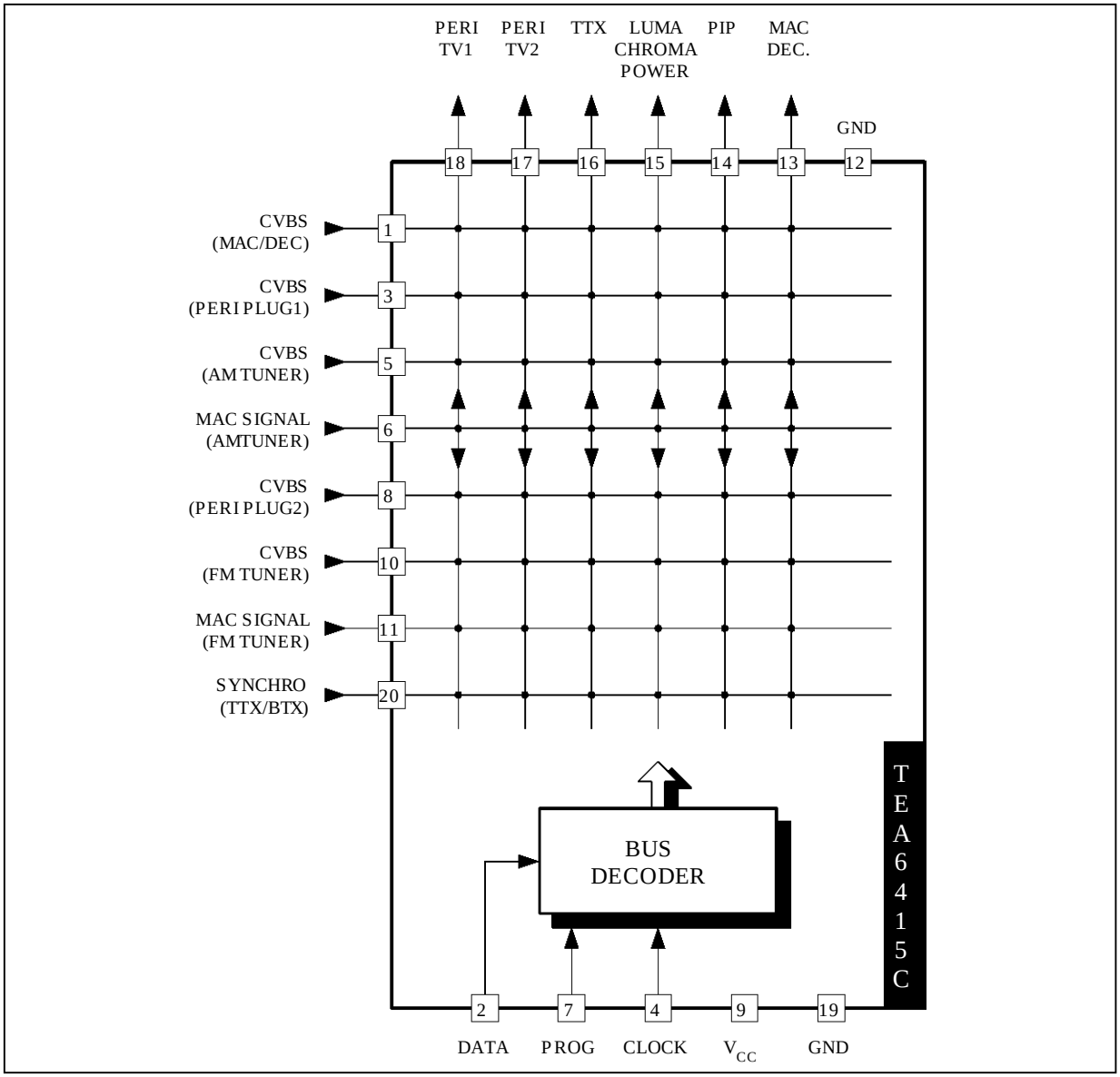
All the switching possibilities are controlled through the I^2C bus.

PIN CONNECTIONS



6415C-01.EPS

BLOCK DIAGRAM



GENERAL DESCRIPTION

The main function of the IC is to switch 8 video input sources on 6 outputs.

Each output can be switched on only one of each input. On each input an alignment of the lowest level of the signal is made (bottom of synch. top for CVBS or black level for RGB signals).

Each nominal gain between any input and output is 6.5dB. For D2MAC or Chroma signal the alignment is switched off by forcing, with an external resistor bridge, 5 V_{DC} on the input. Each input can be used as a normal input or as a MAC or Chroma input (with external resistor bridge). All the switching possibilities are changed through the BUS.

Driving 75Ω load needs an external transistor.

It is possible to have the same input connected to several outputs.

The starting configuration upon power on (power supply : 0 to 10V) is undetermined.

In this case, 6 words of 16 bits are necessary to determine one configuration. In other case, 1 word of 16 bits is necessary to determine one configuration.

I²C-bus controlled single and multistandard alignment-free IF-PLL demodulators

1 FEATURES

- 5 V supply voltage
- Gain controlled wide-band Vision Intermediate Frequency (VIF) amplifier, AC-coupled
- Multistandard true synchronous demodulation with active carrier regeneration: very linear demodulation, good intermodulation figures, reduced harmonics, and excellent pulse response
- Gated phase detector for L and L-accent standard
- Fully integrated VIF Voltage Controlled Oscillator (VCO), alignment-free, frequencies switchable for all negative and positive modulated standards via I²C-bus
- Digital acquisition help, VIF frequencies of 33.4, 33.9, 38.0, 38.9, 45.75, and 58.75 MHz
- 4 MHz reference frequency input: signal from Phase-Locked Loop (PLL) tuning system or operating as crystal oscillator
- VIF Automatic Gain Control (AGC) detector for gain control, operating as peak sync detector for negative modulated signals and as a peak white detector for positive modulated signals
- External AGC setting via pin OP1
- Precise fully digital Automatic Frequency Control (AFC) detector with 4-bit digital-to-analog converter, AFC bits readable via I²C-bus
- TakeOver Point (TOP) adjustable via I²C-bus or alternatively with potentiometer
- Fully integrated sound carrier trap for 4.5, 5.5, 6.0, and 6.5 MHz, controlled by FM-PLL oscillator
- Sound IF (SIF) input for single reference Quasi Split Sound (QSS) mode, PLL controlled
- SIF-AGC for gain controlled SIF amplifier, single reference QSS mixer able to operate in high performance single reference QSS mode and in intercarrier mode, switchable via I²C-bus
- AM demodulator without extra reference circuit
- Alignment-free selective FM-PLL demodulator with high linearity and low noise
- I²C-bus control for all functions
- I²C-bus transceiver with pin programmable Module Address (MAD)
- Four I²C-bus addresses via MAD.

2 GENERAL DESCRIPTION

The TDA9885 is an alignment-free multistandard (PAL and NTSC) vision and sound IF signal PLL demodulator for negative modulation only and FM processing.

The TDA9886 is an alignment-free multistandard (PAL, SECAM and NTSC) vision and sound IF signal PLL demodulator for positive and negative modulation, including sound AM and FM processing.

3 APPLICATIONS

- TV, VTR, PC and STB applications.

4 ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
TDA9885T/V3	SO24	plastic small outline package; 24 leads; body width 7.5 mm	SOT137-1
TDA9885TS/V3	SSOP24	plastic shrink small outline package; 24 leads; body width 5.3 mm	SOT340-1
TDA9885HN/V3	HVQFN32	plastic, heatsink very thin quad flat package; no leads; 32 terminals; body $5 \times 5 \times 0.85$ mm	SOT617-1
TDA9886T/V3	SO24	plastic small outline package; 24 leads; body width 7.5 mm	SOT137-1
TDA9886TS/V3	SSOP24	plastic shrink small outline package; 24 leads; body width 5.3 mm	SOT340-1

6 BLOCK DIAGRAM

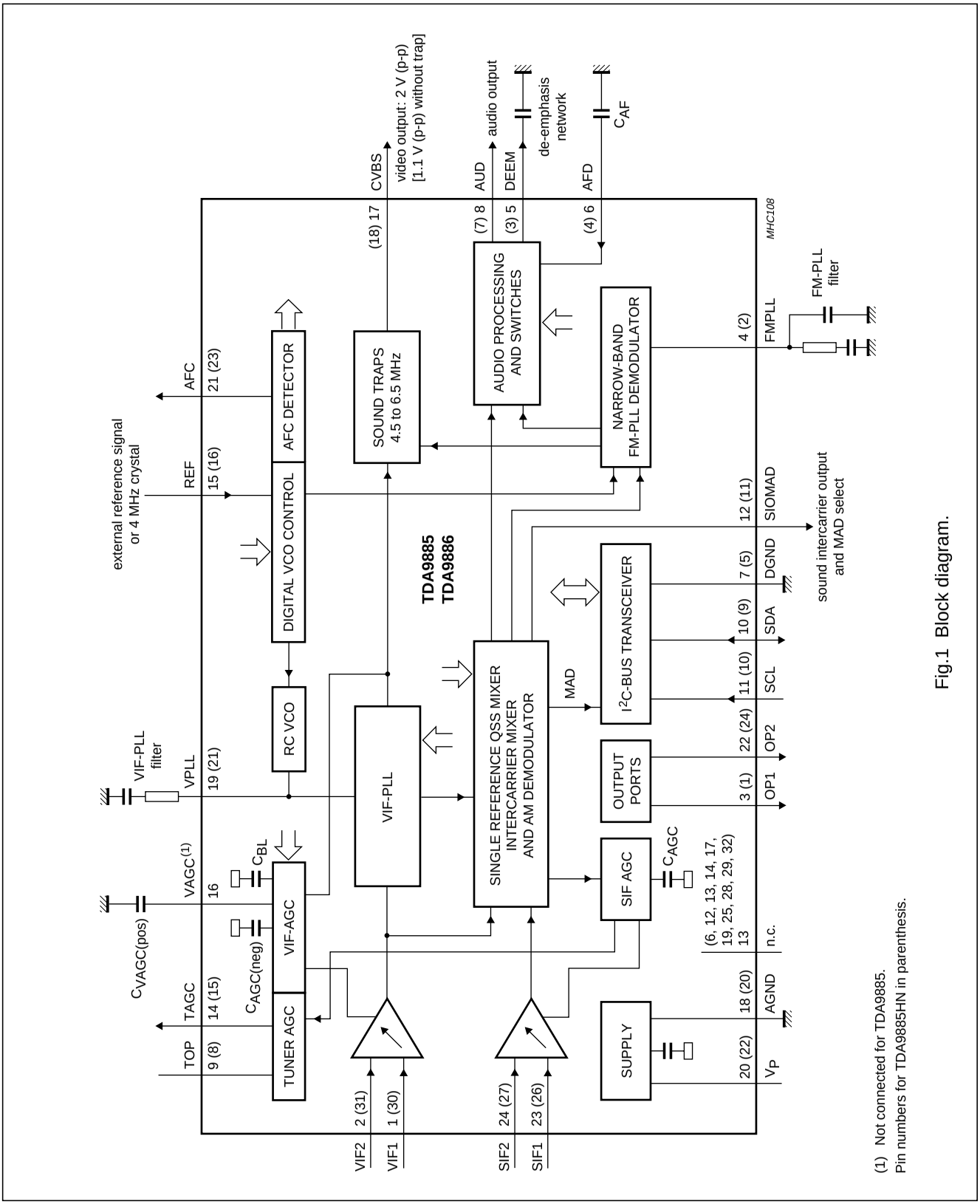


Fig.1 Block diagram.

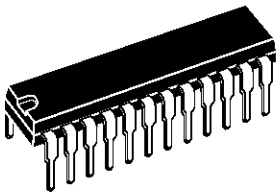
(1) Not connected for TDA9885.
Pin numbers for TDA9885HN in parenthesis.

SGS-THOMSON MICROELECTRONICS

TEA6420

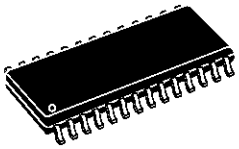
BUS-CONTROLLED AUDIO MATRIX

- 5 STEREO INPUTS
- 4 STEREO OUPUTS
- GAIN CONTROL 0/2/4/6dB/MUTE FOR EACH OUTPUT
- CASCADABLE (2 different addresses)
- SERIAL BUS CONTROLLED
- VERY LOW NOISE
- VERY LOW DISTORSION



SHRINK24
(Plastic Package)

ORDER CODE : TEA6420



SO28
(Plastic Micropackage)

ORDER CODE : TEA6420D

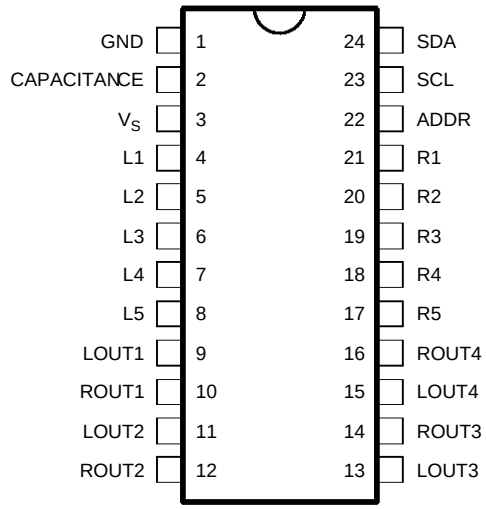
DESCRIPTION

The TEA6420 switches 5 stereo audio inputs on 4 stereo outputs.

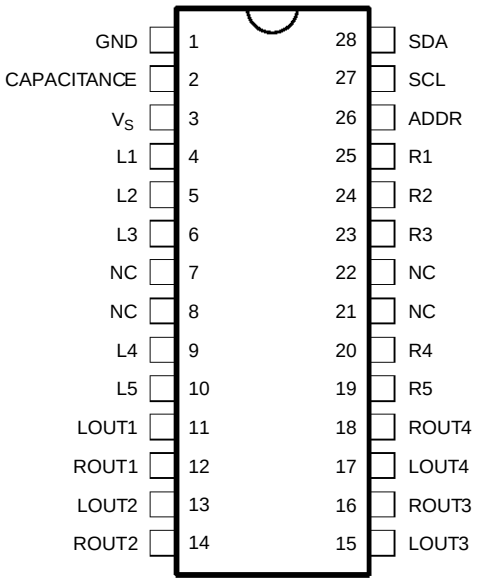
All the switching possibilities are changed through the I^2C bus.

PIN CONNECTIONS

SHRINK24

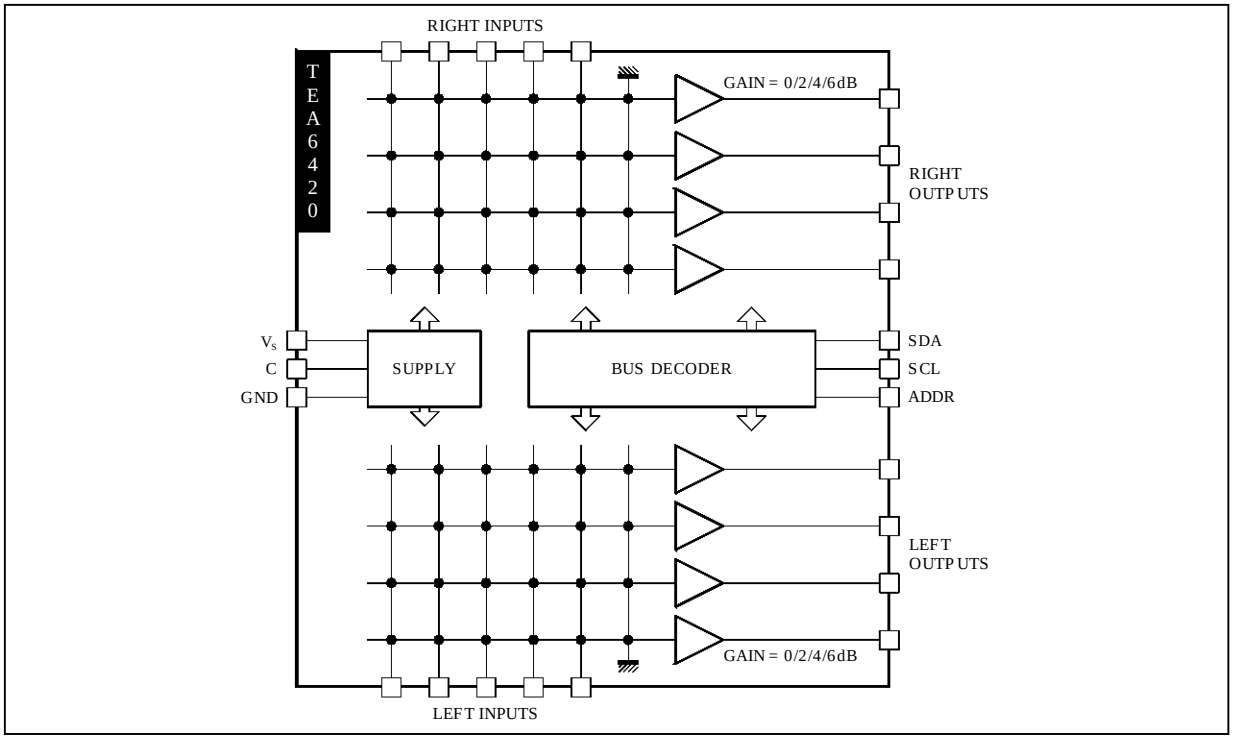


SO28



6420-01.EPS / 6420-02.EPS

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	10.2	V
T_{oper}	Operating Ambient Temperature	0, + 70	^oC
T_{stg}	Storage Temperature	- 20, + 150	^oC

6420-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th(j-a)}$	Junction Ambient Thermal Resistance	SHRINK24 SO28	75 75	$^oC/W$

6420-02.TBL

ELECTRICAL CHARACTERISTICS

$T_A = 25^oC$, $V_S = 10V$, $R_L = 10k\Omega$, $R_G = 600\Omega$, f = 1kHz (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
SUPPLY						
V_S	Supply Voltage		8	9	10.2	V
I_S	Supply Current			5	8	mA
SVR	Ripple Rejection	$V_{IN} = 500mV_{RMS}$, BW = 20 - 20kHz	70	80		dB
MATRIX						
V_{IN}	Input DC Level		4.5	5	5.5	V
R_I	Input Resistance		30	50	100	kΩ
C_S	Channel Separation	$V_{IN} = 2V_{RMS}$ Gain = 0dB f = 1kHz Gain = 6dB	80 70	90 82		dB dB

6420-03.TBL

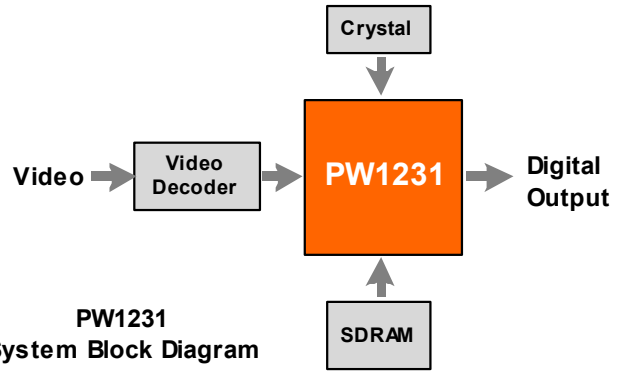
PW1231

Product Specification

General

The PW1231 is a high-quality, digital video signal processor that incorporates Pixelworks' patented deinterlacing, scaling, and video enhancement algorithms. The PW1231 accepts industry-standard video formats and resolutions, and converts the input into any desired output format.The video algorithms are highly efficient, providing excellent quality video.

The PW1231 Video SignalProcessor combines many functions into a single device, including memory controller, auto-configuration, and others. This high level of integration enables simple, flexible, cost-effective solutions featuring fewer required components.



PW1231
System Block Diagram

Features

- Built-In Memory Controller
- Motion-Adaptive Deinterlace Processor
- Intelligent Edge Deinterlacing
- Digital Color/Luminance Transient Improvement (DCTI/DLTI)
- Interlaced Video Input Options, including NTSC and PAL
- Independent horizontal and vertical scaling
- Copy Protection
- Two-Wire Serial Interface

Applications:
For use with Digital Displays

- Flat-Panel (LCD, DLP) TVs
- Rear Projection TVs
- Plasma Displays
- LCD Multimedia Monitors
- Multimedia Projectors

Device	Application	Package
PW1231 PW1231-L	Up to XGA	160-pin PQF

NOTE: "L" denotes lead (Pb) free

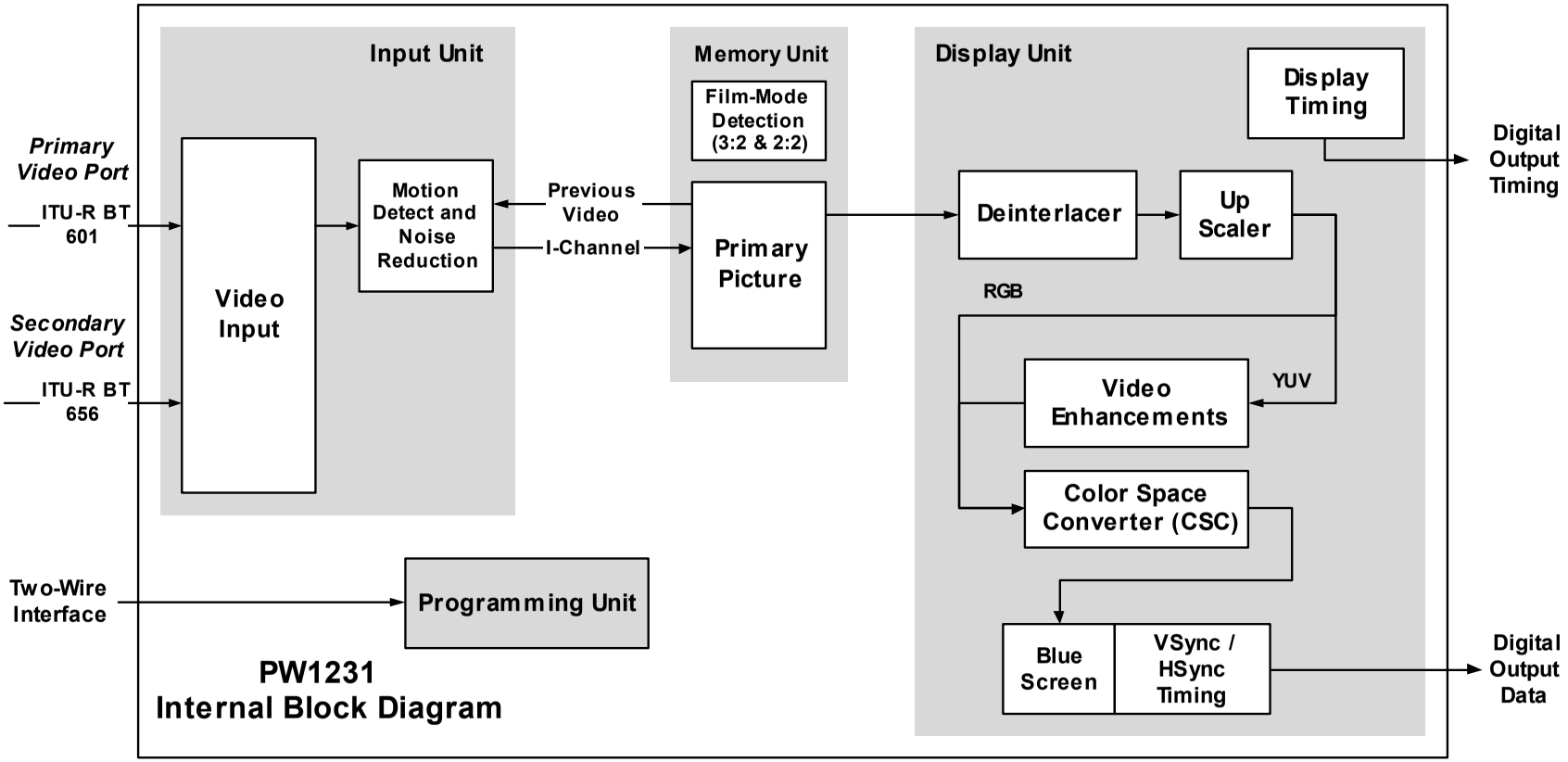


Figure 1-1 Internal Block Diagram

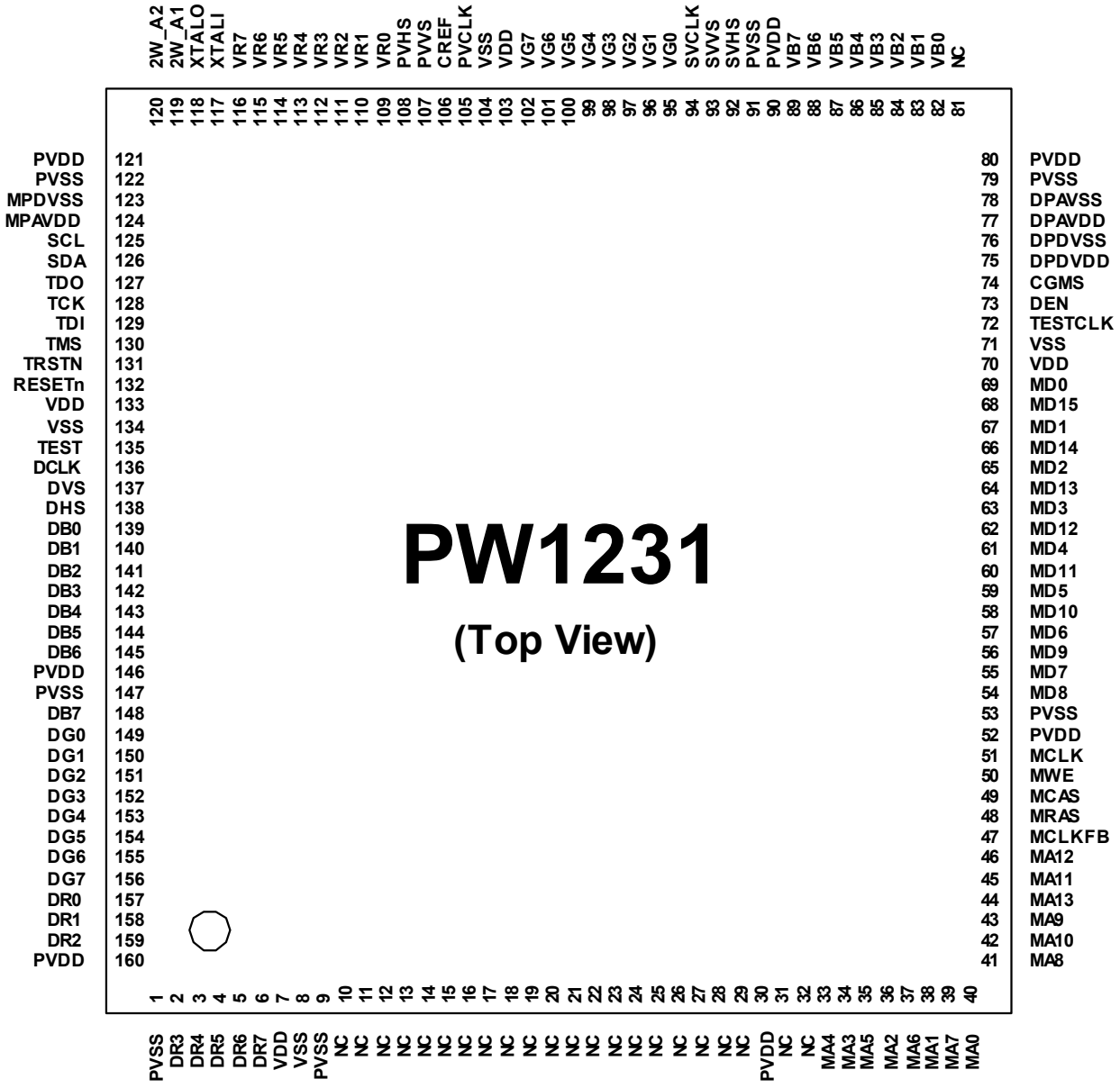


Figure 2-1 PW1231 Pin Layout

PW181

Product Specification

General Description

The PW181 ImageProcessor is a highly integrated "system-on-a-chip" that interfaces computer graphics and video inputs in virtually any format to a fixed-frequency flat panel display.

Computer and video images from NTSC/PAL to WUXGA at virtually any refresh rate can be resized to fit on a fixed-frequency target display device with any resolution up to WUXGA. Video data from 4:3 aspect ratio NTSC or PAL and 16:9 aspect ratio HDTV or SDTV is supported. Multi-region, nonlinear scaling allows these inputs to be resized optimally for the native resolution of the display.

Advanced scaling techniques are supported, such as format conversion using multiple programmable regions. Three independent image scalers coupled with frame locking circuitry and dual programmable color lookup tables create sharp images in multiple windows, without user intervention.

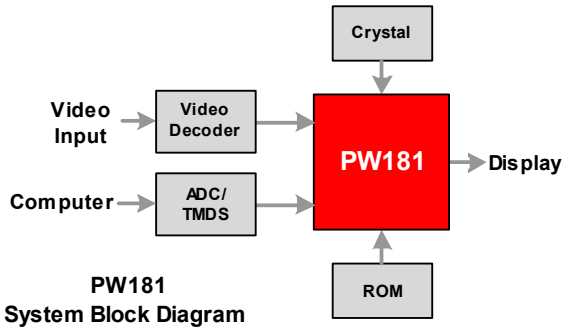
Embedded SDRAM frame buffers and memory controllers perform frame rate conversion and enhanced video processing completely on-chip. A separate memory is dedicated to storage of on-screen display images and CPU general purpose use.

Advanced video processing techniques are supported using the internal frame buffer, including motion adaptive, temporal deinterlacing with film mode detection. When used in combination with the new third-generation scaler, this advanced video processing technology delivers the highest quality video for advanced displays.

Both input ports support integrated DVI 1.0 content protection using standard DVI receivers.

A new advanced OSD Generator with more colors and larger sizes supports more demanding OSD applications, such as on-screen programming guides. When coupled with the new, faster, integrated microprocessor, this OSD Generator supports advanced OSD animation techniques.

Programmable features include the user interface, custom start-up screen, all automatic imaging features, and special screen effects.



PW181
System Block Diagram

Features

- Third-generation, two-dimensional filtering techniques
- Third-generation, advanced scaling techniques
- Second-generation Automatic Image Optimization
- Frame rate conversion
- Video processing
- On-Screen Display (OSD)
- On-chip microprocessor
- JTAG debugger and boundary scan
- Picture-in-picture (PIP)
- Multi-region, non-linear scaling
- Hardware 2-wire serial bus support

Applications

- Multimedia Displays
- Plasma Displays
- Digital Television

Device	Application	Package
PW181-10V	Up to XGA Displays	352 PBGA
PW181-20V	Up to UXGA Displays	
PW181-30V	Up to WUXGA Display	

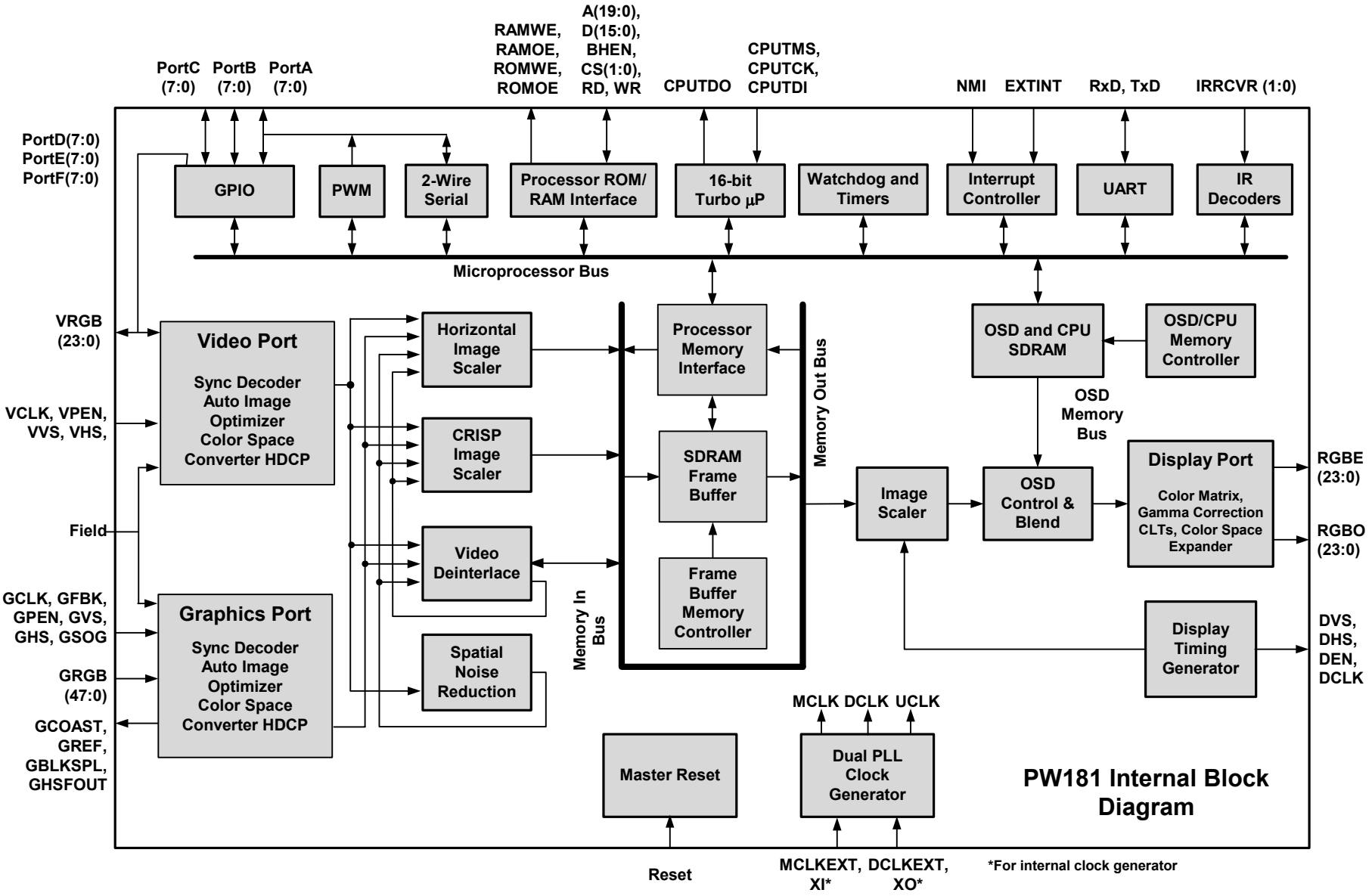


Figure 1-1 Internal Block Diagram

L6B RECOMMEDED SPARE PARTS

POSITION	PART NUMBER	PART DESCRIPTION
	056T27-CH1	LCD CHIMEI V270W1-L04 (LCD TV)
	056T30-CH1	LCD CHI-MEI V296W1-L14 (LCD TV) 30")
	056W26-LP2	LCD LG-PHILIPS LC260W01-A5K6 (LCD TV)
	L38172	CU ASSY 30" L6B (ZR1192-21)
	L57172	CU ASSY 27" L6B (ZR1192-21)
	UR3110	L6B CHASIS 27"TOS MS/NX/3/SK/PIP/PEN/DVI
	US1110	L6B CHASIS TOS 30" M/NX/3/SK/PIP/PEN/DVI
	US1172	CU ASSY 30" L6BL38 TOSHIBA (ZR1191-20)
	Y23172	CU ASSY 26L6L43 L6B VER.(ZP9191-20)
	Y22172	CU ASSY 26L6BL44 (ZG5192-20)
	Y51120	L6 CHASIS DAUGHTER BOARD
	ZG4187F	RC L6B TOSHIBA GRI/SHINE SI.P.ED CT-870
	JX1187	R/C L6B REMOTE CONTROL JAECS SIL.GRUNDIG
	ZG4301	TERMINAL BATT.BOX(+-) R/C TOSHIBA
	ZJ9172	POWER SWITCH ASSY 27/30" L6B(ZJ9192-20)
	ZJ9205F	BACK COVER 30" L38 LCD TV SILVER L6B
	ZJ9206F	SCART BACK COVER 30L38 LCD TV SILVER
	ZJ9251F	FRONT COVER G.BL/BUR.SIL P.ED 30L38 TOS.
	ZJ9805	CUSHION LEFT 30" LCD TV
	ZJ9806	CUSHION RIGHT 30" LCD TV
	ZR1107-AS	SPEAKER 10W 4R PALSTIC CASE KAB MOUNTED
	ZR1172	CU ASSY 27" L6BL57 TOSHIBA (ZR1191-20)
	ZR1204F	LENS IR/LED 30"L38 LCD TV
	ZR1205F	BACK COVER 27" L57 LCD TV SILVER L6B
	ZR1208F	KNOB POWER 27"L57 LCD TV SILVER
	ZR1212F	KNOB PROGRAM/VOL. 27LCD TOSHIBA SILVER
	ZR1251F	FRONT COVER G.BL./BUR.SIL P.ED 27L57 TOS
	ZR1255	BACK COVER DARK GRAY P.ED 27L6BL57 LCD
	ZR1258	POWER KNOB BURNISH SILVER PAINTED 27"L57
	ZR1805	CUSHION LEFT 30" LCD TV
	ZR1806	CUSHION RIGHT 27" LCD TV
	ZR1910	ADAPTOR SPS 180W 24/5 12/5 PFC 2PIN(LISH
AV/TV	010844	TACT SWITCH 2 LEG (MTSB)
CN250	031383	CON.DVI 24+5POL JRX1-DV124+5
CN601	ZJ9512-AS	CABLE PANEL.INTERFACE 30"L6B CHI 30.LU
	303407	LED ROT LTL 4221N P6 GREEN
	303447	LED 3MM RED-BLUE LIGITEK LSRFSBK2092
F450	054290	FUSE 5.0A 250V ROUND
F451	054290	FUSE 5.0A 250V ROUND
IR1	452521-01	IR RECEIVER TSOP34838 SS1A
J19	031508	KONN. RF IEC TO RCA
J53	031477	KONN. CINCH .... WHITE HOR.12,5MM 30L6
J56	031478	KONN. CINCH ..... RED HOR.12,5MM 30L6
J57	031423	HEADPHONE JACK YKB21-5103
J832	031479	KONN. CINCH ... YELLOW HOR.12,5MM 30L6
J926	031795	KONN.S-VHS
MENU	010844	TACT SWITCH 2 LEG (MTSB)
P250	031358	CONN. VGA B10B
SAW825	056708	SAW FILTER OFW K3958M
SAW826	056708	SAW FILTER OFW K3958M
SAW827	056010	SAW FILTER OFW K9656M

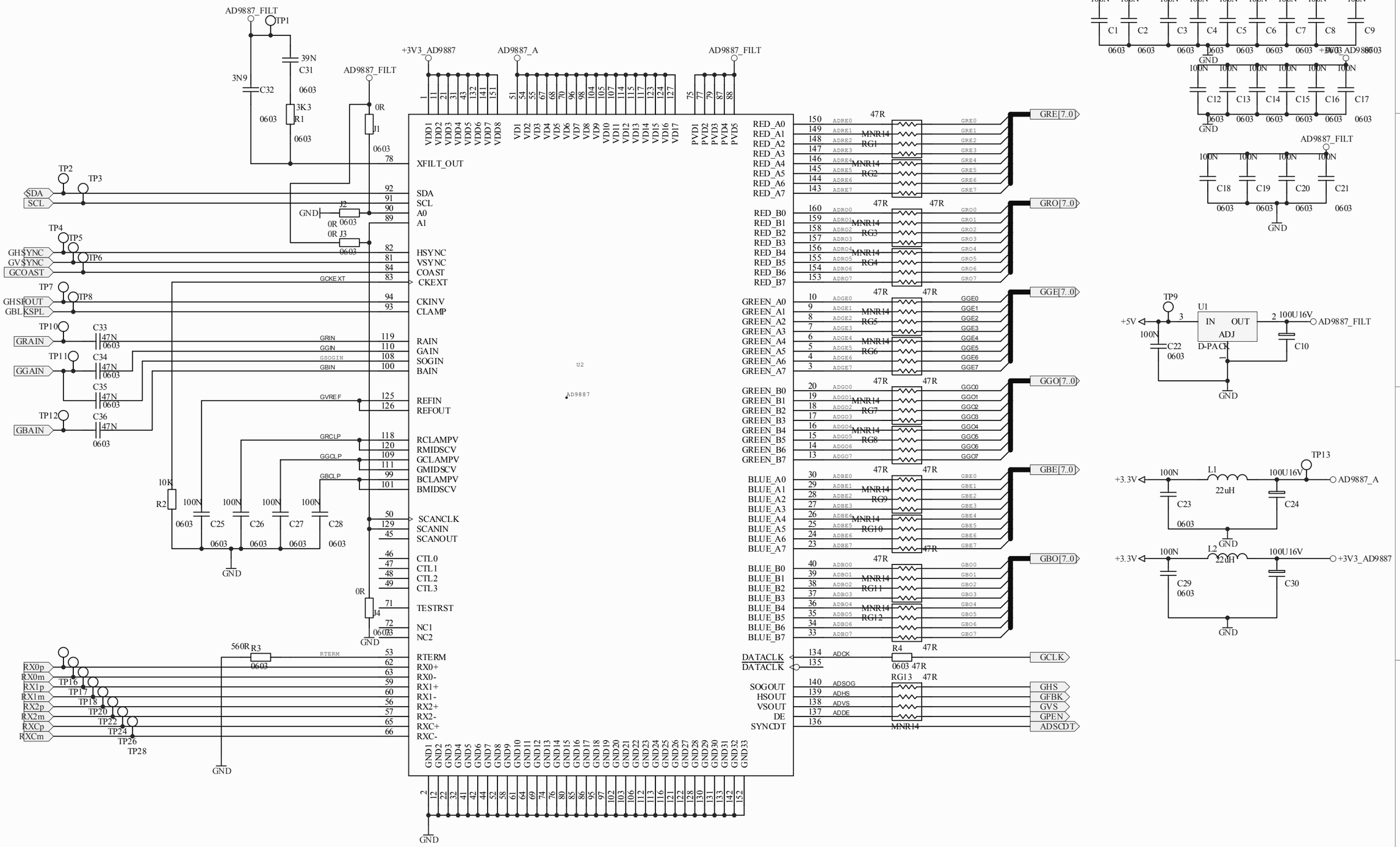
SAW828	056010	SAW FILTER OFW K9656M
SW1	010861	ON/OFF SWITCH BK98
TU825	Y51136-PH1	TUNER PH UV1316T/SIGH-3 SPL ASIMTRK YAT
TU826	Y11136	TUNER HOR.PHILLIPS UV1316/A I H-4
U1	453124	IC-CHIP NCP1117DT33RK TO-252 PACKAGE
U150	453195	IC PI5V330W SOIC(W)
U151	453350	IC-CHIP PCF8591 /SO16
U2	453262	IC-CHIP AD9887KS-100- DUAL IN.FACE TRAY
U250	453261	IC-CHIP 24LC21A-I/SN-CMOS18K/2.5V SE.T&R
U251	453261	IC-CHIP 24LC21A-I/SN-CMOS18K/2.5V SE.T&R
U3	453494	IC-CHIP TRIPATH TA2024 STEREO CLAS-D T&R
U350	453921	IC-CHIP DS90C385A MTD56
U351	452997	IC LM358DR2 / S08
U400	453233	IC-CHIP AM29LV160DB-90EC (TRAY)TSOP48
U401	453263	IC-CHIP AT24C64N-10SI-2. - SO8 TAPE&REEL
U402	453349	IC-CHIP TLC7733 /SO8
U450	453095	IC-CHIP NCP1117DTARK (DPAK)(T&R) TO252
U452	401372	TRN FDS9933A
U454	453294	IC-CHIP LM2576D2TR4-005V 3A TO263 STPT&R
U455	453294	IC-CHIP LM2576D2TR4-005V 3A TO263 STPT&R
U456	453428	IC-CHIP LM317MDT VAR.VOLT.REG. TO-252
U457	453124	IC-CHIP NCP1117DT33RK TO-252 PACKAGE
U458	453124	IC-CHIP NCP1117DT33RK TO-252 PACKAGE
U50	452706	IC TDA1308T/N1 SO-G8 (T&R)
U51	453352	IC-CHIP MSP3410-MQFP64
U52	453351	IC TEA6420 /SO28
U650	453346	IC-CHIP PW1231A
U750	452863	IC MT48LC4M16A2-7E SDRAM 54PIN TSOP
U825	451569	IC-CHIP TDA9886T/V3 118(SO24) T&R
U826	451569	IC-CHIP TDA9886T/V3 118(SO24) T&R
U827	453271	IC-CHIP TEA6415CDT -VIDEO-MAT-SW.T&R
U925	453124	IC-CHIP NCP1117DT33RK TO-252 PACKAGE
X941	8R9185	HP JACK 17"LCD TV
Y300	056753	CRYSTALL 24.576MHZ 20PF 30PPM
Y50	056952	CRYSTAL 18.432MHZ +-30PPM
Y550	056119	CRYSTAL 14.31818MHz CL=18PF30/30PPMHC49U
Y650	056121	CRYSTAL 10 MHz / HC49U 20PF 30PPM
Y825	056013	CRYSTAL 4 MHZ HC49-U
Y826	056013	CRYSTAL 4 MHZ HC49-U
Y925	056753	CRYSTALL 24.576MHZ 20PF 30PPM

FREQUENCY TABLE (MHz)

Channel	Number	BG	I	DK	L/L'
CH	1		49.75	49.75	47.75
CH	2	48.25	59.25	59.25	55.75
CH	3	55.25	77.25	77.25	60.50
CH	4	62.25	85.25	85.25	63.75
CH	5	175.25	93.25	93.25	176.00
CH	6	182.25	175.25	175.25	184.00
CH	7	189.25	183.25	183.25	192.00
CH	8	196.25	191.25	191.25	200.00
CH	9	203.25	199.25	199.25	208.00
CH	10	210.25	207.25	207.25	216.00
CH	11	217.25	215.25	215.25	189.25
CH	12	224.25	223.25	223.25	182.25
CH	13	53.75	45.75		196.25
CH	14	62.25	53.75		210.25
CH	15	82.25	61.75		
CH	16	175.25	69.75		
CH	17	183.25	95.25		
CH	18	192.25			
CH	19	201.25			
CH	20	210.25			
CH	21	471.25	471.25	471.25	471.25
CH	22	479.25	479.25	479.25	479.25
CH	23	487.25	487.25	487.25	487.25
CH	24	495.25	495.25	495.25	495.25
CH	25	503.25	503.25	503.25	503.25
CH	26	511.25	511.25	511.25	511.25
CH	27	519.25	519.25	519.25	519.25
CH	28	527.25	527.25	527.25	527.25
CH	29	535.25	535.25	535.25	535.25
CH	30	543.25	543.25	543.25	543.25
CH	31	551.25	551.25	551.25	551.25
CH	32	559.25	559.25	559.25	559.25
CH	33	567.25	567.25	567.25	567.25
CH	34	575.25	575.25	575.25	575.25
CH	35	583.25	583.25	583.25	583.25
CH	36	591.25	591.25	591.25	591.25
CH	37	599.25	599.25	599.25	599.25
CH	38	607.25	607.25	607.25	607.25
CH	39	615.25	615.25	615.25	615.25
CH	40	623.25	623.25	623.25	623.25
CH	41	631.25	631.25	631.25	631.25
CH	42	639.25	639.25	639.25	639.25
CH	43	647.25	647.25	647.25	647.25
CH	44	655.25	655.25	655.25	655.25

Channel	Number	BG	I	DK	L/L'
CH	45	663.25	663.25	663.25	663.25
CH	46	671.25	671.25	671.25	671.25
CH	47	679.25	679.25	679.25	679.25
CH	48	687.25	687.25	687.25	687.25
CH	49	695.25	695.25	695.25	695.25
CH	50	703.25	703.25	703.25	703.25
CH	51	711.25	711.25	711.25	711.25
CH	52	719.25	719.25	719.25	719.25
CH	53	727.25	727.25	727.25	727.25
CH	54	735.25	735.25	735.25	735.25
CH	55	743.25	743.25	743.25	743.25
CH	56	751.25	751.25	751.25	751.25
CH	57	759.25	759.25	759.25	759.25
CH	58	767.25	767.25	767.25	767.25
CH	59	775.25	775.25	775.25	775.25
CH	60	783.25	783.25	783.25	783.25
CH	61	791.25	791.25	791.25	791.25
CH	62	799.25	799.25	799.25	799.25
CH	63	807.25	807.25	807.25	807.25
CH	64	815.25	815.25	815.25	815.25
CH	65	823.25	823.25	823.25	823.25
CH	66	831.25	831.25	831.25	831.25
CH	67	839.25	839.25	839.25	839.25
CH	68	847.25	847.25	847.25	847.25
CH	69	855.25	855.25	855.25	855.25
CH	70		863,25		863.25
CH	71		871,25		
CH	72		879,25		
CH	73		887,25		160.00
CH	74	69.25			172.00
CH	75	76.25			220.00
CH	76	83.25			232.00
CH	77	90.25			244.00
CH	78	97.25			256.00
CH	79	59.25			268.00
CH	80	93.25			280.00
S	1	105.25	103.25	103.25	116.75
S	2	112.25	111.25	111.25	128.75
S	3	119.25	119.25	119.25	140.75
S	4	126.25	127.25	127.25	152.75
S	5	133.25	135.25	135.25	164.75
S	6	140.25	143.25	143.25	176.75
S	7	147.25	151.25	151.25	188.75
S	8	154.25	159.25	159.25	200.75
S	9	161.25	167.25	167.25	212.75
S	10	168.25	231.25	231.25	224.75
S	11	231.25	239.25	239.25	236.75
S	12	238.25	247.25	247.25	248.75
S	13	245.25	255.25	255.25	260.75
S	14	252.25	263.25	263.25	272.75

Channel	Number	BG	I	DK	L/L'
S	15	259.25	271.25	271.25	284.75
S	16	266.25	279.25	279.25	296.75
S	17	273.25	287.25	287.25	55.75
S	18	280.25	295.25	295.25	60.50
S	19	287.25	303.25	303.25	63.75
S	20	294.25			
S	21	303.25			303.25
S	22	311.25	311.25	311.25	311.25
S	23	319.25	319.25	319.25	319.25
S	24	327.25	327.25	327.25	327.25
S	25	335.25	335.25	335.25	335.25
S	26	343.25	343.25	343.25	343.25
S	27	351.25	351.25	351.25	351.25
S	28	359.25	359.25	359.25	359.25
S	29	367.25	367.25	367.25	367.25
S	30	375.25	375.25	375.25	375.25
S	31	383.25	383.25	383.25	383.25
S	32	391.25	391.25	391.25	391.25
S	33	399.25	399.25	399.25	399.25
S	34	407.25	407.25	407.25	407.25
S	35	415.25	415.25	415.25	415.25
S	36	423.25	423.25	423.25	423.25
S	37	431.25	431.25	431.25	431.25
S	38	439.25	439.25	439.25	439.25
S	39	447.25	447.25	447.25	447.25
S	40	455.25	455.25	455.25	455.25
S	41	463.25	463.25	463.25	463.25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C31
3N9
C32
0603
3K3
R1
0603
0603
AD9887_FILT
0R
J1
0603
78
XFILT_OUT
+3V3_AD9887
AD9887_A
AD9887_FILT
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8
VD1 VD2 VD3 VD4 VD5 VD6 VD7 VD8 VD9 VD10 VD11 VD12 VD13 VD14 VD15 VD16 VD17
PVD1 PVD2 PVD3 PVD4 PVD5
TP2
TP3
SDA
SCL
92
91
SDA
SCL
J2
GND
0R 0603
90
A0
0R J3
0603
89
A1
TP4
TP5
TP6
GHSYNC
GVSYNC
GCOAST
82
81
84
HSYNC
VSYNC
COAST
GCKEXT
83
CKEXT
TP7
TP8
GHSFOUT
GBLKSPL
94
93
CKINV
CLAMP
TP10
C33
GRAIN
47N
0603
GRIN
119
RAIN
TP11
C34
GGAIN
47N
0603
GGIN
110
GAIN
GSOGIN
108
SOGIN
C35
47N
0603
GBIN
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BAIN
GVREF
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REFIN
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REFOUT
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0603
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RCLAMPV
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RMIDSCV
GGCLP
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GCLAMPV
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GMIDSCV
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10K
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C26
0603
100N
C27
0603
100N
C28
0603
GND
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SCANCLK
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SCANIN
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SCANOUT
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CTL0
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CTL1
48
CTL2
49
CTL3
0R
J4
0603
71
TESTRST
72
NC1
73
NC2
560R R3
0603
RTERM
53
RTERM
RX0p
RX0m
RX1p
RX1m
RX2p
RX2m
RXCp
RXCm
TP16
TP17
TP18
TP20
TP22
TP24
TP26
TP28
62
RX0+
63
RX0-
59
RX1+
60
RX1-
56
RX2+
57
RX2-
65
RXC+
66
RXC-
U2
AD9887
GND1 GND2 GND3 GND4 GND5 GND6 GND7 GND8 GND9 GND10 GND11 GND12 GND13 GND14 GND15 GND16 GND17 GND18 GND19 GND20 GND21 GND22 GND23 GND24 GND25 GND26 GND27 GND28 GND29 GND30 GND31 GND32 GND33
2 12 22 32 41 42 44 52 58 61 64 69 74 76 80 85 86 95 97 102 103 106 112 113 116 121 122 128 130 131 133 142 152
GND
RED_A0
RED_A1
RED_A2
RED_A3
RED_A4
RED_A5
RED_A6
RED_A7
150 149 148 147 146 145 144 143
ADRE0 ADRE1 ADRE2 ADRE3 ADRE4 ADRE5 ADRE6 ADRE7
47R
MNR14
RG1
RG2
GRE0 GRE1 GRE2 GRE3 GRE4 GRE5 GRE6 GRE7
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RED_B5
RED_B6
RED_B7
160 159 158 157 156 155 154 153
ADRO0 ADRO1 ADRO2 ADRO3 ADRO4 ADRO5 ADRO6 ADRO7
47R
MNR14
RG3
RG4
GRO0 GRO1 GRO2 GRO3 GRO4 GRO5 GRO6 GRO7
GRO[7..0]
GREEN_A0
GREEN_A1
GREEN_A2
GREEN_A3
GREEN_A4
GREEN_A5
GREEN_A6
GREEN_A7
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ADGE0 ADGE1 ADGE2 ADGE3 ADGE4 ADGE5 ADGE6 ADGE7
47R
MNR14
RG5
RG6
GGE0 GGE1 GGE2 GGE3 GGE4 GGE5 GGE6 GGE7
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GREEN_B1
GREEN_B2
GREEN_B3
GREEN_B4
GREEN_B5
GREEN_B6
GREEN_B7
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ADGO0 ADGO1 ADGO2 ADGO3 ADGO4 ADGO5 ADGO6 ADGO7
47R
MNR14
RG7
RG8
GGO0 GGO1 GGO2 GGO3 GGO4 GGO5 GGO6 GGO7
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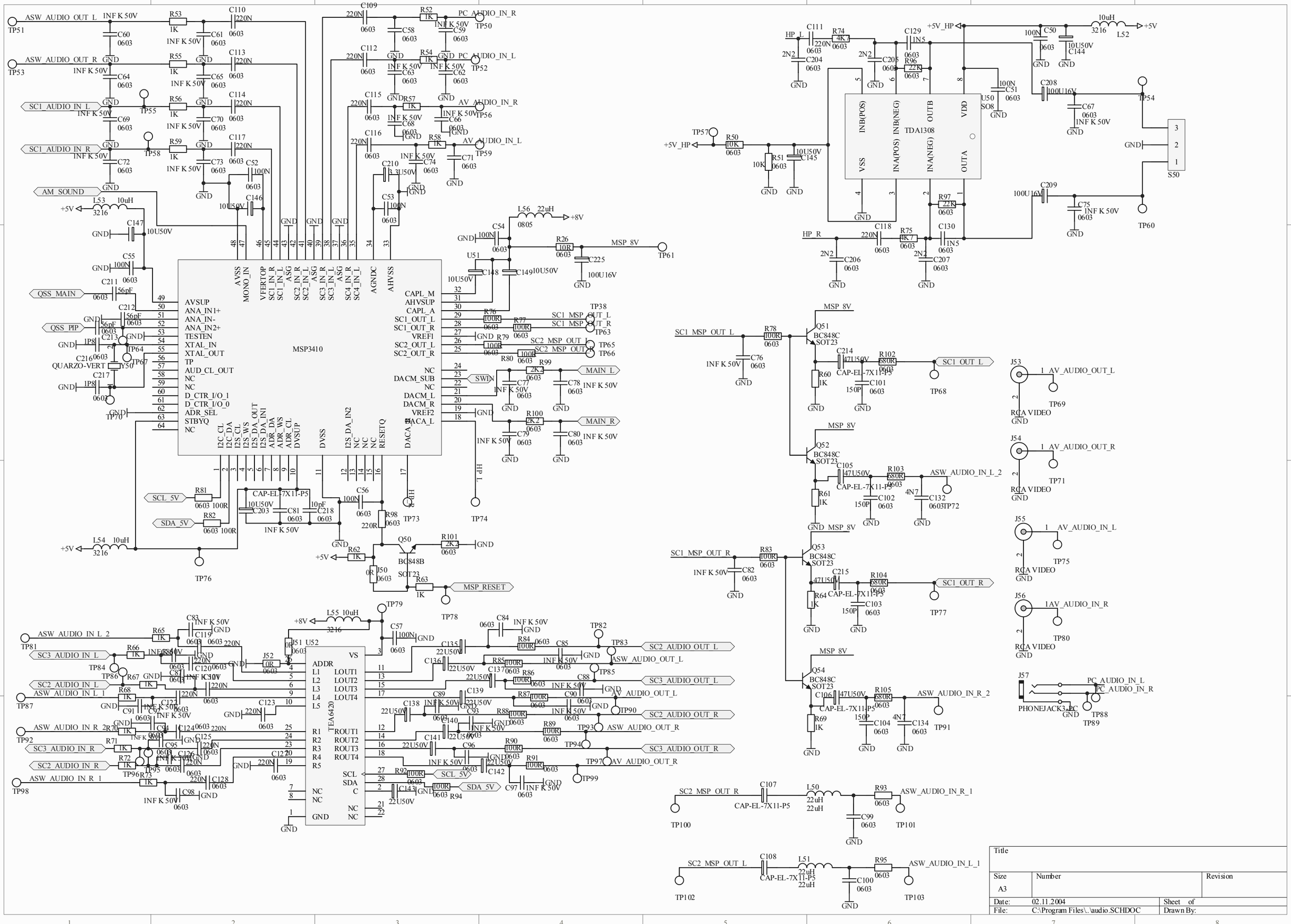
BLUE_A1
BLUE_A2
BLUE_A3
BLUE_A4
BLUE_A5
BLUE_A6
BLUE_A7
30 29 28 27 26 25 24 23
ADBE0 ADBE1 ADBE2 ADBE3 ADBE4 ADBE5 ADBE6 ADBE7
47R
MNR14
RG9
RG10
GBE0 GBE1 GBE2 GBE3 GBE4 GBE5 GBE6 GBE7
GBE[7..0]
BLUE_B0
BLUE_B1
BLUE_B2
BLUE_B3
BLUE_B4
BLUE_B5
BLUE_B6
BLUE_B7
40 39 38 37 36 35 34 33
ADBO0 ADBO1 ADBO2 ADBO3 ADBO4 ADBO5 ADBO6 ADBO7
47R
MNR14
RG11
RG12
GBO0 GBO1 GBO2 GBO3 GBO4 GBO5 GBO6 GBO7
GBO[7..0]
DATACLK
DATACLK
134 135
ADCK
R4 47R
0603
GCLK
SOGOUT
HSOUT
VSOUT
DE
SYNCDT
140 139 138 137 136
ADSOG ADHS ADVS ADDE
RG13 47R
MNR14
GHS
GFBK
GVS
GPEN
ADSCDT
AD9887_A
100N C1 0603
100N C2 0603
100N C3 0603
100N C4 0603
100N C5 0603
100N C6 0603
100N C7 0603
100N C8 0603
100N C9 0603
+3V3_AD9887
GND
100N C12 0603
100N C13 0603
100N C14 0603
100N C15 0603
100N C16 0603
100N C17 0603
GND
AD9887_FILT
100N C18 0603
100N C19 0603
100N C20 0603
100N C21 0603
GND
TP9
U1
+5V
3
IN
OUT
ADJ
2
100U16V
AD9887_FILT
100N
C22
0603
D-PACK
C10
GND
TP13
+3.3V
100N
L1
22uH
100U16V
AD9887_A
C23
0603
C24
GND
+3.3V
100N
L2
22uH
100U16V
+3V3_AD9887
C29
0603
C30
GND



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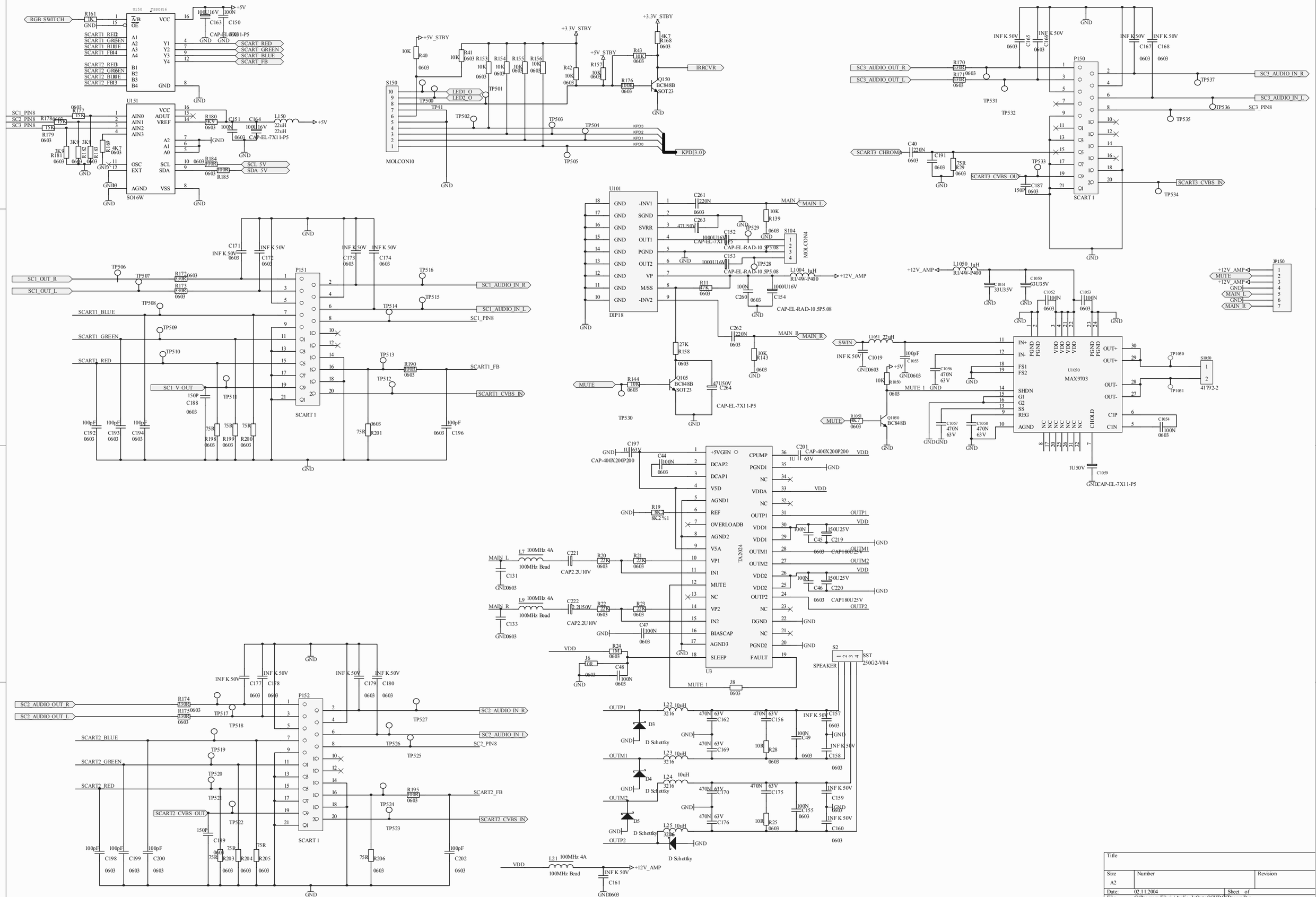
RGB_SWITCH
SCART1_RED
SCART1_GREEN
SCART1_BLUE
SCART1_FB
SCART_RED
SCART_GREEN
SCART_BLUE
SCART_FB
SCART2_RED
SCART2_GREEN
SCART2_BLUE
SCART2_FB
SCL_5V
SDA_5V
SC1_PIN8
SC2_PIN8
SC3_PIN8
IRRCVR
LED1_O
LED2_O
KPD3
KPD2
KPD1
KPD0
KPD[3..0]
MOLCON10
SC1_OUT_R
SC1_OUT_L
SC1_V_OUT
SC1_AUDIO_IN_R
SC1_AUDIO_IN_L
SCART1_CVBS_IN
SCART1
SC2_AUDIO_OUT_R
SC2_AUDIO_OUT_L
SC2_AUDIO_IN_R
SC2_AUDIO_IN_L
SCART2_CVBS_OUT
SCART2_CVBS_IN
SCART 1
SC3_AUDIO_OUT_R
SC3_AUDIO_OUT_L
SC3_AUDIO_IN_R
SC3_AUDIO_IN_L
SCART3_CHROMA
SCART3_CVBS_OUT
SCART3_CVBS_IN
SCART 1
MAIN_L
MAIN_R
MUTE
MUTE_1
SWIN
+12V_AMP
SPEAKER
OUTP1
OUTP2
OUTM1
OUTM2
VDD
+5V
+3.3V_STBY
+5V_STBY
GND
DIP18
MOLCON4
MAX9703
TA2024
D Schottky
CAP-EL-7X11-P5
CAP-EL-RAD-10.5P5.08
CAP-400X200P200
MOLCON3
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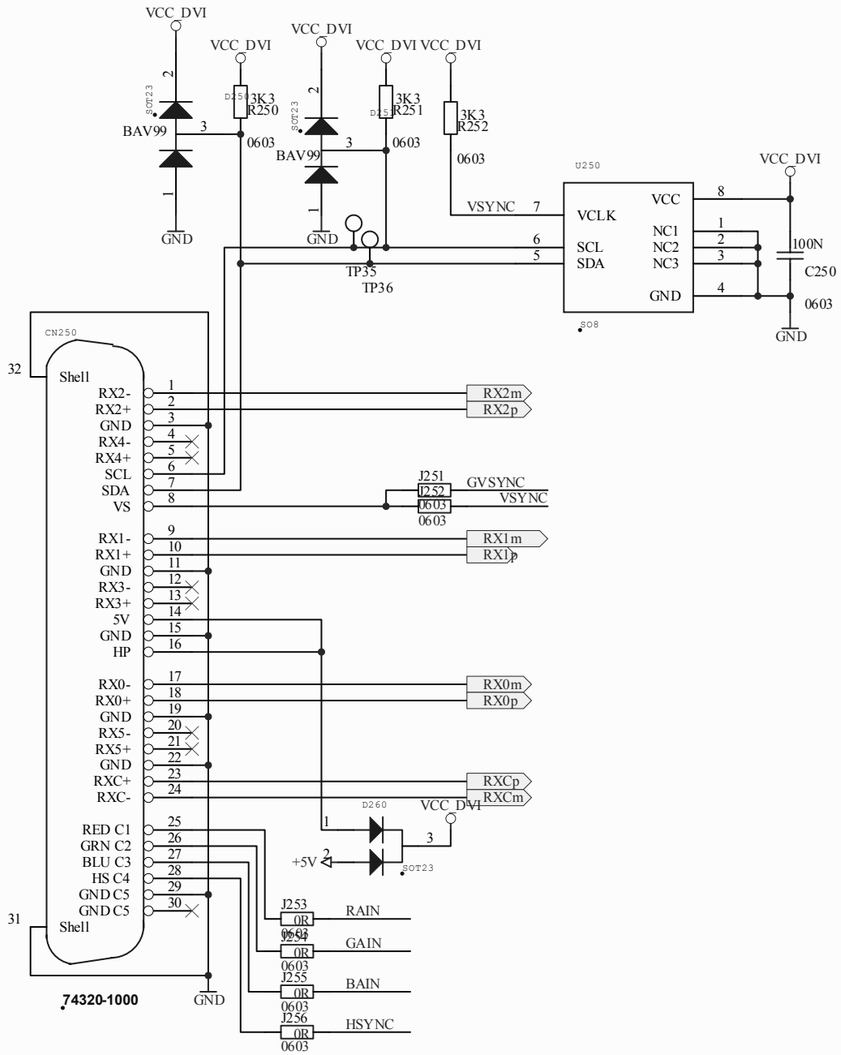
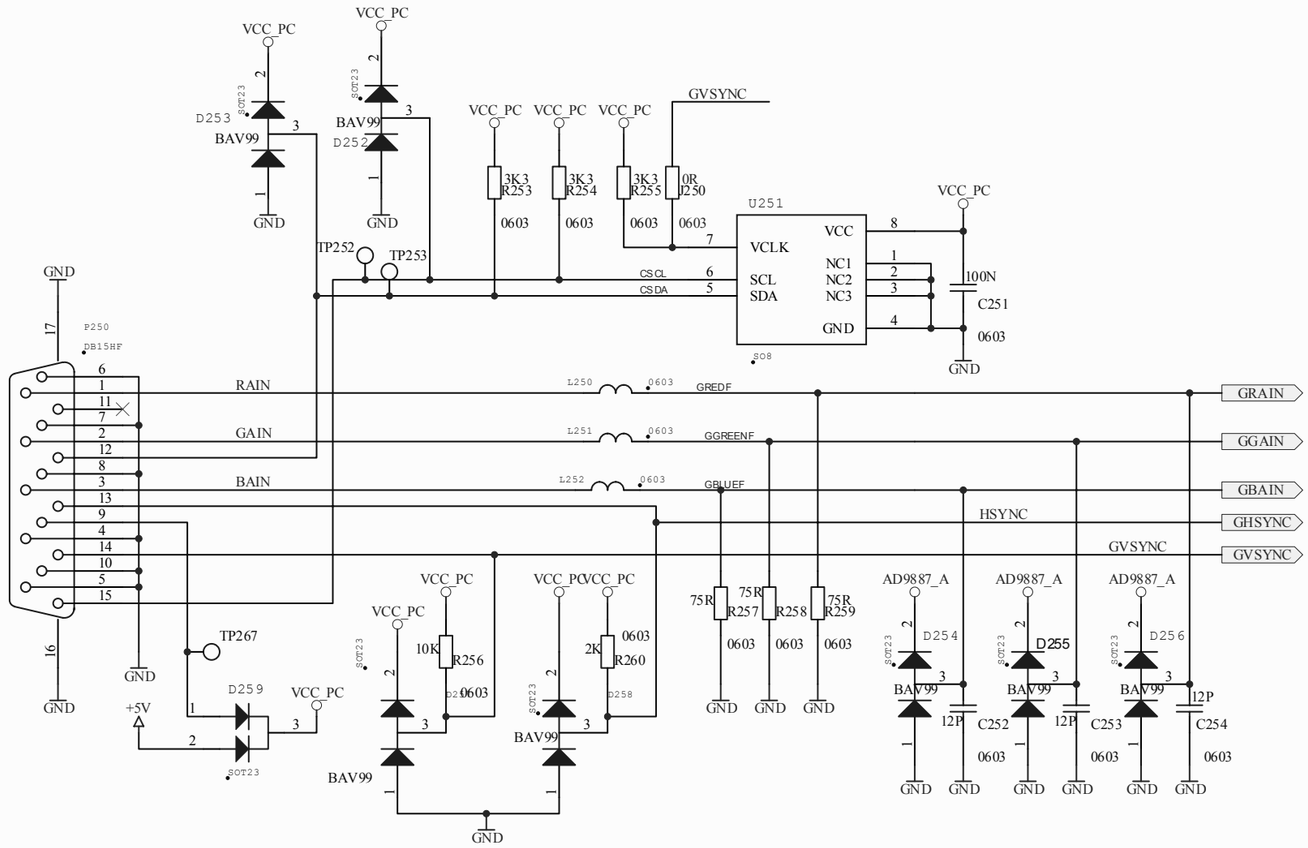
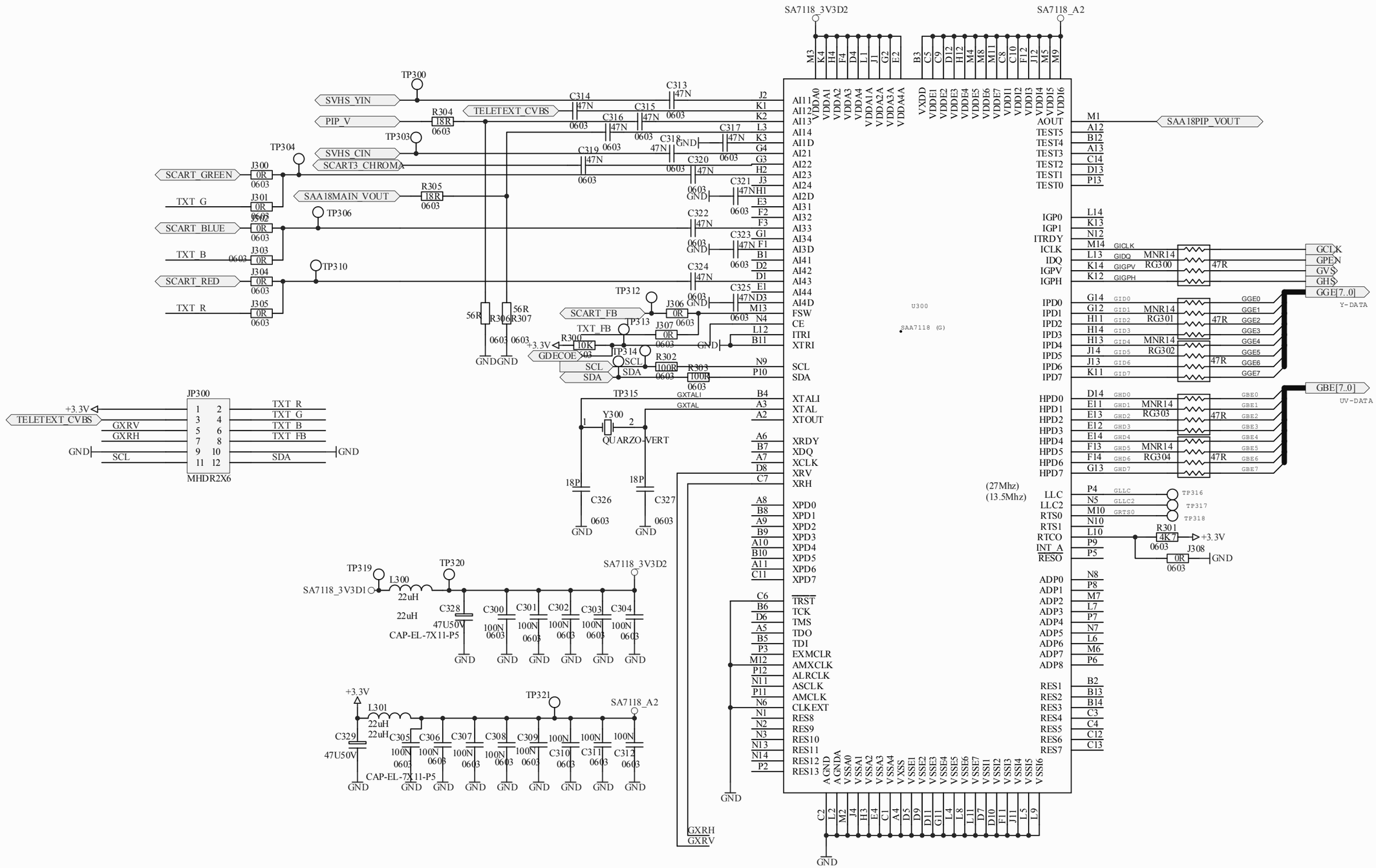
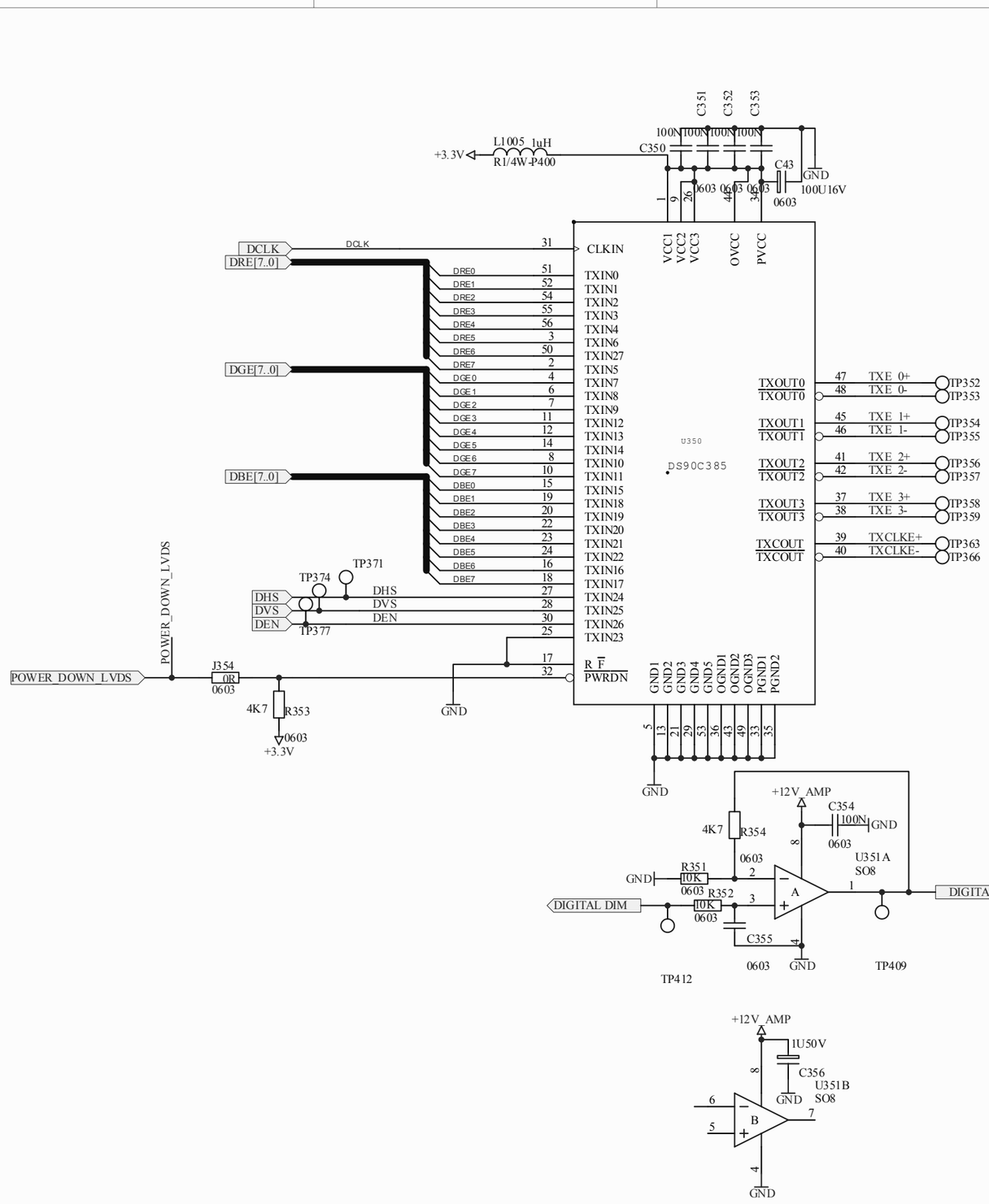
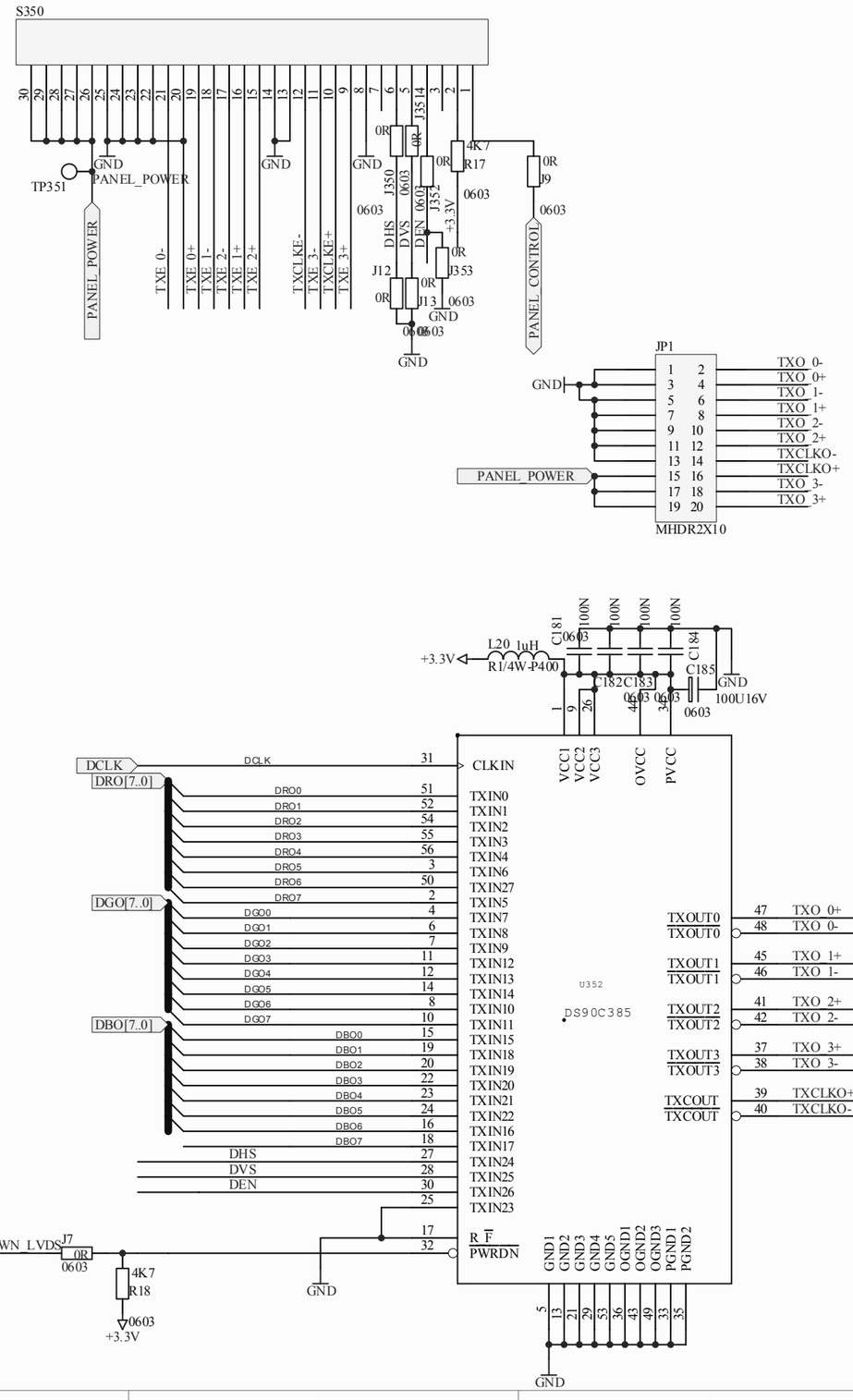
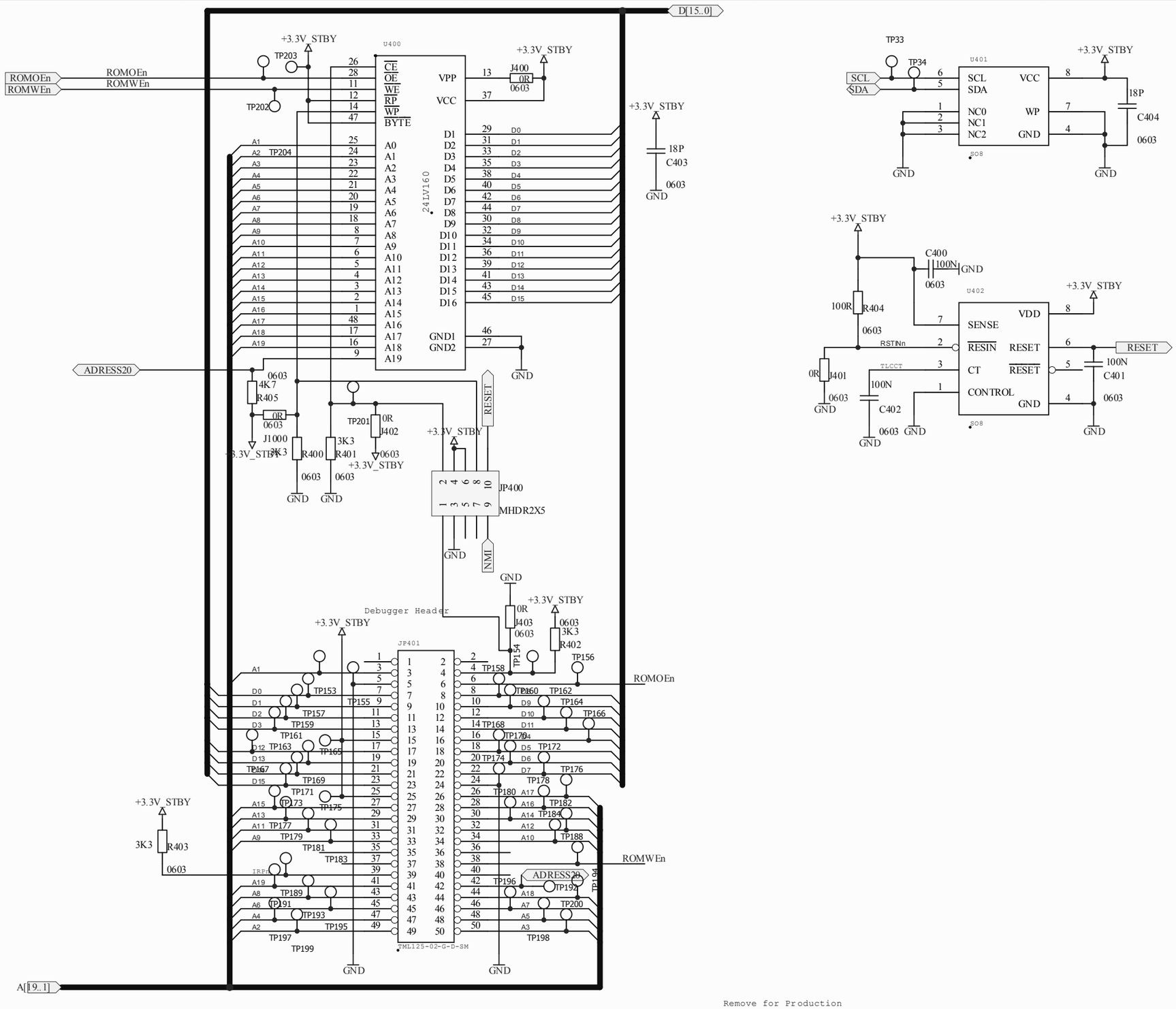

VCC_DVI
BAV99
3K3 R250
3K3 R251
3K3 R252
0603
GND
TP35
TP36
U250
VCLK
SCL
SDA
VCC
NC1
NC2
NC3
GND
SO8
VSYNC
100N
C250
CN250
Shell
RX2-
RX2+
RX4-
RX4+
SCL
SDA
VS
RX1-
RX1+
RX3-
RX3+
5V
HP
RX0-
RX0+
RX5-
RX5+
RXC+
RXC-
RED C1
GRN C2
BLU C3
HS C4
GND C5
RX2m
RX2p
RX1m
RX1p
RX0m
RX0p
RXCp
RXCm
J251
J252
GVSYNC
J253
J254
J255
J256
RAIN
GAIN
BAIN
HSYNC
0R
D260
SOT23
+5V
74320-1000

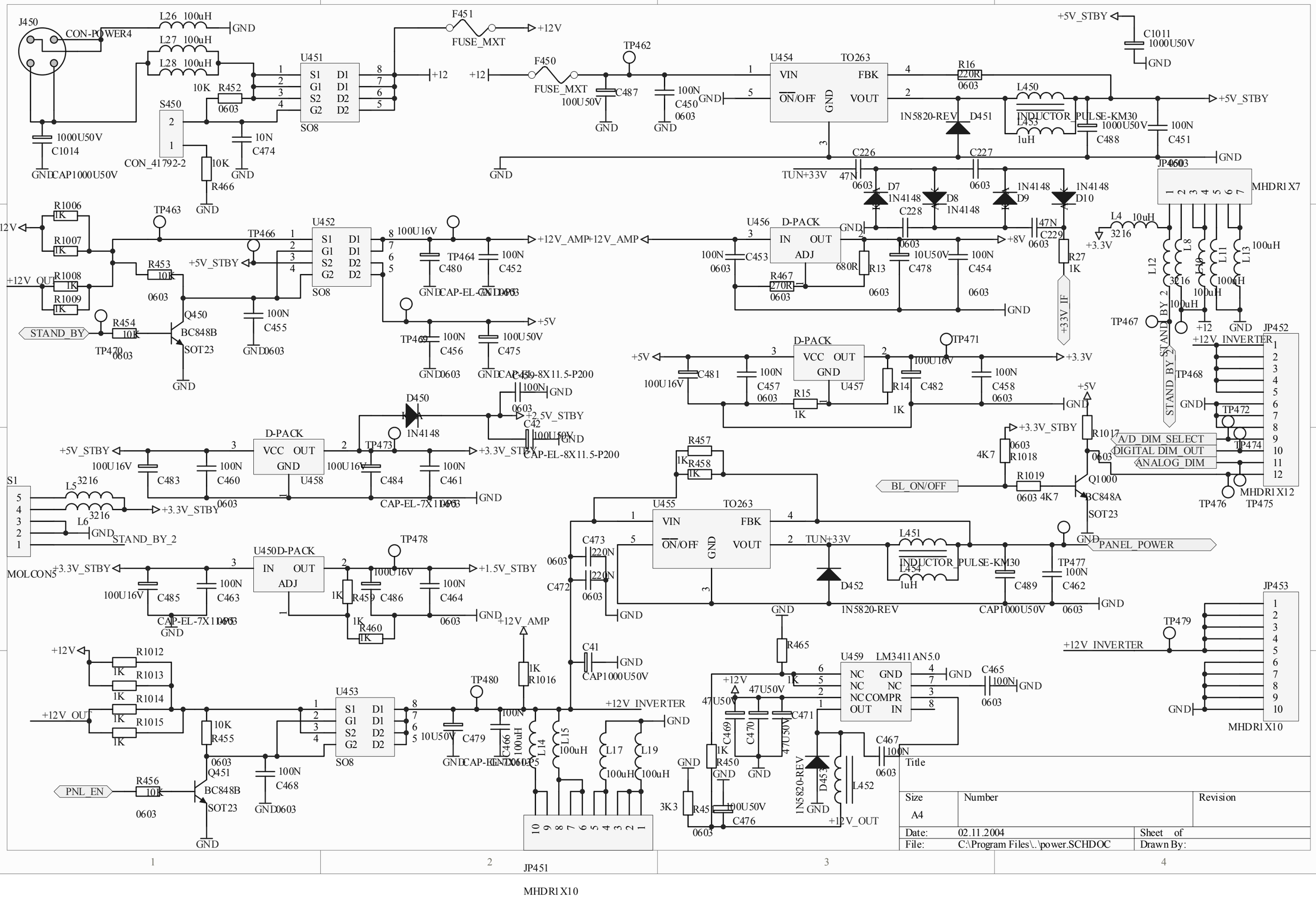

VCC_PC
D253
D252
BAV99
3K3 R253
3K3 R254
3K3 R255
0R J250
0603
GND
GVSYNC
TP252
TP253
U251
VCLK
SCL
SDA
VCC
NC1
NC2
NC3
GND
SO8
CSCL
CSDA
100N
C251
P250
DB15HF
RAIN
GAIN
BAIN
L250
L251
L252
GREDF
GGREENF
GBLUEF
GRAIN
GGAIN
GBAIN
HSYNC
GHSYNC
GVSYNC
TP267
D259
+5V
10K R256
2K R260
75R R257
75R R258
75R R259
D258
AD9887_A
D254
D255
D256
12P
C252
C253
C254


SA7118_3V3D2
SA7118_A2
U300
SAA7118 (G)
TP300
SVHS_YIN
PIP_V
SVHS_CIN
SCART3_CHROMA
SAA18MAIN_VOUT
TELETEXT_CVBS
R304 18R 0603
R305 18R 0603
TP303
TP304
TP306
TP310
TP312
TP313
TP314
TP315
SCART_GREEN
TXT_G
SCART_BLUE
TXT_B
SCART_RED
TXT_R
J300 0R 0603
J301 0R 0603
J302 0R 0603
J303 0R 0603
J304 0R 0603
J305 0R 0603
R306 56R 0603
R307 56R 0603
SCART_FB
TXT_FB
GDECOE
SCL
SDA
J306 0R 0603
J307 0R 0603
R300 10K 0603
R302 100R 0603
R303 100R 0603
+3.3V
GND
GXTALI
GXTAL
Y300
QUARZO-VERT
18P
C326 0603
C327 0603
C313 47N 0603
C314 47N 0603
C315 47N 0603
C316 47N 0603
C317 47N 0603
C318 47N 0603
C319 47N 0603
C320 47N 0603
C321 47N 0603
C322 47N 0603
C323 47N 0603
C324 47N 0603
C325 47N 0603
GXRH
GXRV
(27Mhz)
(13.5Mhz)
SAA18PIP_VOUT
GCLK
GPEN
GVS
GHS
GGE[7..0]
Y-DATA
GBE[7..0]
UV-DATA
MNR14 RG300 47R
MNR14 RG301 47R
MNR14 RG302 47R
MNR14 RG303 47R
MNR14 RG304 47R
TP316
TP317
TP318
R301 4K7 0603
J308 0R 0603
JP300
MHDR2X6
TXT_R
TXT_G
TXT_B
TXT_FB
GXRV
GXRH
SCL
SDA
TP319
TP320
TP321
L300 22uH
L301 22uH
C328 47U50V CAP-EL-7X11-P5
C329 47U50V CAP-EL-7X11-P5
C300 100N 0603
C301 100N 0603
C302 100N 0603
C303 100N 0603
C304 100N 0603
C305 100N 0603
C306 100N 0603
C307 100N 0603
C308 100N 0603
C309 100N 0603
C310 100N 0603
C311 100N 0603
C312 100N 0603


C351
C352
C353
100N
100N
100N
100N
C350
L1005 1uH
R1/4W-P400
+3.3V
C43
GND
100U16V
0603
0603
0603
0603
1
9
26
DCLK
DRE[7..0]
DGE[7..0]
DBE[7..0]
DCLK
DRE0
DRE1
DRE2
DRE3
DRE4
DRE5
DRE6
DRE7
DGE0
DGE1
DGE2
DGE3
DGE4
DGE5
DGE6
DGE7
DBE0
DBE1
DBE2
DBE3
DBE4
DBE5
DBE6
DBE7
31
51
52
54
55
56
3
50
2
4
6
7
11
12
14
8
10
15
19
20
22
23
24
16
18
CLKIN
TXIN0
TXIN1
TXIN2
TXIN3
TXIN4
TXIN6
TXIN27
TXIN5
TXIN7
TXIN8
TXIN9
TXIN12
TXIN13
TXIN14
TXIN10
TXIN11
TXIN15
TXIN18
TXIN19
TXIN20
TXIN21
TXIN22
TXIN16
TXIN17
TXIN24
TXIN25
TXIN26
TXIN23
VCC1
VCC2
VCC3
OVCC
PVCC
U350
DS90C385
TXOUT0
TXOUT0
TXOUT1
TXOUT1
TXOUT2
TXOUT2
TXOUT3
TXOUT3
TXCOUT
TXCOUT
47
48
45
46
41
42
37
38
39
40
TXE 0+
TXE 0-
TXE 1+
TXE 1-
TXE 2+
TXE 2-
TXE 3+
TXE 3-
TXCLKE+
TXCLKE-
TP352
TP353
TP354
TP355
TP356
TP357
TP358
TP359
TP363
TP366
TP371
TP374
TP377
DHS
DVS
DEN
POWER_DOWN_LVDS
J354
0R
0603
4K7
R353
+3.3V
GND
R F
PWRDN
17
32
GND1
GND2
GND3
GND4
GND5
OGND1
OGND2
OGND3
PGND1
PGND2
5
13
21
29
53
36
43
49
33
35
+12V_AMP
C354
100N
4K7
R354
R351
10K
R352
10K
C355
U351A
SO8
A
DIGITAL DIM
DIGITAL DIM_OUT
TP412
TP409
1U50V
C356
U351B
SO8
B


S350
TP351
PANEL_POWER
GND
TXE 0-
TXE 0+
TXE 1-
TXE 2-
TXE 1+
TXE 2+
TXCLKE-
TXE 3-
TXCLKE+
TXE 3+
J350
J351
J352
J353
J12
J13
0R
4K7
R17
J9
DHS
DVS
DEN
+3.3V
PANEL_CONTROL
JP1
MHDR2X10
TXO_0-
TXO_0+
TXO_1-
TXO_1+
TXO_2-
TXO_2+
TXCLKO-
TXCLKO+
TXO_3-
TXO_3+
C181
C182
C183
C184
C185
L20 1uH
R1/4W-P400
DRO[7..0]
DGO[7..0]
DBO[7..0]
U352
TP14
TP15
TP19
TP21
TP23
TP25
TP27
TP37
TP39
TP40
J7
R18


D[15..0]
U400
+3.3V_STBY
TP203
TP202
TP204
ROMOEn
ROMWEn
ADRESS20
CE
OE
WE
RP
WP
BYTE
VPP
VCC
GND1
GND2
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
241V160
J400
0R
0603
18P
C403
4K7
R405
J1000
3K3
R400
R401
TP201
J402
RESET
JP400
MHDR2X5
NMI
Debugger Header
JP401
J403
R402
TP154
TP156
TP158
TP160
TP162
TP164
TP166
TP168
TP170
TP172
TP174
TP176
TP178
TP180
TP182
TP184
TP186
TP188
TP190
TP192
TP194
TP196
TP198
TP200
TP153
TP155
TP157
TP159
TP161
TP163
TP165
TP167
TP169
TP171
TP173
TP175
TP177
TP179
TP181
TP183
TP189
TP191
TP193
TP195
TP197
TP199
FML125-02-G-D-SM
3K3
R403
IRFn
A[19..1]
ROMOEn
ROMWEn
TP33
TP34
U401
SCL
SDA
NC0
NC1
NC2
VCC
WP
GND
SO8
C404
C400
100N
R404
100R
U402
VDD
SENSE
RESIN
CT
CONTROL
RESET
RSTINn
TLCCT
J401
C402
C401
Remove for Production


J450
CON-POWER4
L26 100uH
L27 100uH
L28 100uH
GND
10K R452
0603
S450
CON_41792-2
10K R466
10N C474
1000U50V C1014
CAP1000U50V
U451
S1 D1
G1 D1
S2 D2
G2 D2
SO8
F451
FUSE_MXT
+12V
F450
FUSE_MXT
TP462
C487 100U50V
C450 100N 0603
U454 TO263
VIN FBK
ON/OFF GND VOUT
R16 220R 0603
1N5820-REV D451
L450 INDUCTOR_PULSE-KM30
L453 1uH
C488 1000U50V
C451 100N
+5V_STBY
C1011 1000U50V
C226 47N 0603
C227 0603
TUN+33V
D7 1N4148
D8 1N4148
D9 1N4148
D10 1N4148
C228 0603
C229 47N 0603
JP4 MHDR1X7
R1006 1K
R1007 1K
R1008 1K
R1009 1K
TP463
TP466
U452
S1 D1
G1 D1
S2 D2
G2 D2
SO8
100U16V
TP464 C480
100N C452
GNDCAP-EL-6X10-P2.5
R453 10K 0603
100N C455
R454 10K 0603
STAND_BY
Q450 BC848B SOT23
TP470
TP469
100N C456
100U50V C475
GND0603
GNDCAP-EL-8X11.5-P200
+12V_AMP
+5V
U456 D-PACK
IN OUT
ADJ
100N C453 0603
R467 270R 0603
680R R13 0603
10U50V C478 0603
100N C454 0603
R27 1K
+33V IF
L4 10uH 3216
+3.3V
L8 L12 L10 L11 L13 100uH
TP467
STAND_BY_2
+12
GND
JP452
+12V_INVERTER
TP468
TP472
TP474
TP476
TP475
MHDR1X12
D450 1N4148
C42 100U50V
CAP-EL-8X11.5-P200
+2.5V_STBY
U458 D-PACK
VCC OUT
GND
TP473
100U16V C483
100N C460
100U16V C484
100N C461
CAP-EL-7X11-P3.5
+3.3V_STBY
U457 D-PACK
VCC OUT
GND
100U16V C481
100N C457 0603
R15 1K
R14 1K
C482
100N C458 0603
+3.3V
+5V
R1017 4K7
R1018 4K7 0603
R1019 4K7 0603
Q1000 BC848A SOT23
BL_ON/OFF
A/D_DIM_SELECT
DIGITAL DIM_OUT
ANALOG_DIM
+3.3V_STBY
S1
L5 3216
L6 3216
+3.3V_STBY
GND
STAND_BY_2
R457 1K
R458 1K
U455 TO263
VIN FBK
ON/OFF GND VOUT
C473 220N 0603
C472 220N 0603
TUN+33V
L451 INDUCTOR_PULSE-KM30
L454 1uH
D452 1N5820-REV
C489 CAP1000U50V
TP477 100N C462 0603
PANEL_POWER
U450 D-PACK
IN OUT
ADJ
MOLCON5
+3.3V_STBY
100U16V C485
100N C463
CAP-EL-7X11-P3.5
TP478
100U16V
1K R459
C486
100N C464 0603
1K R460
+1.5V_STBY
+12V_AMP
C41 CAP1000U50V
R465 1K
U459 LM3411AN5.0
NC GND
NC NC
NC COMPR
OUT IN
C465 100N 0603
TP479
+12V_INVERTER
JP453
MHDR1X10
R1012 1K
R1013 1K
R1014 1K
R1015 1K
+12V_OUT
U453
S1 D1
G1 D1
S2 D2
G2 D2
SO8
TP480
1K R1016
+12V_INVERTER
10K R455
0603
Q451 BC848B SOT23
PNL_EN
R456 10K 0603
100N C468
GND0603
10U50V C479
100N C466
100uH L14 L15 L17 L19
47U50V C469 C470 C471
R450 1K
3K3 R451
100U50V C476
0603
1N5820-REV D453
L452
C467 100N 0603
+12V_OUT
JP451
MHDR1X10
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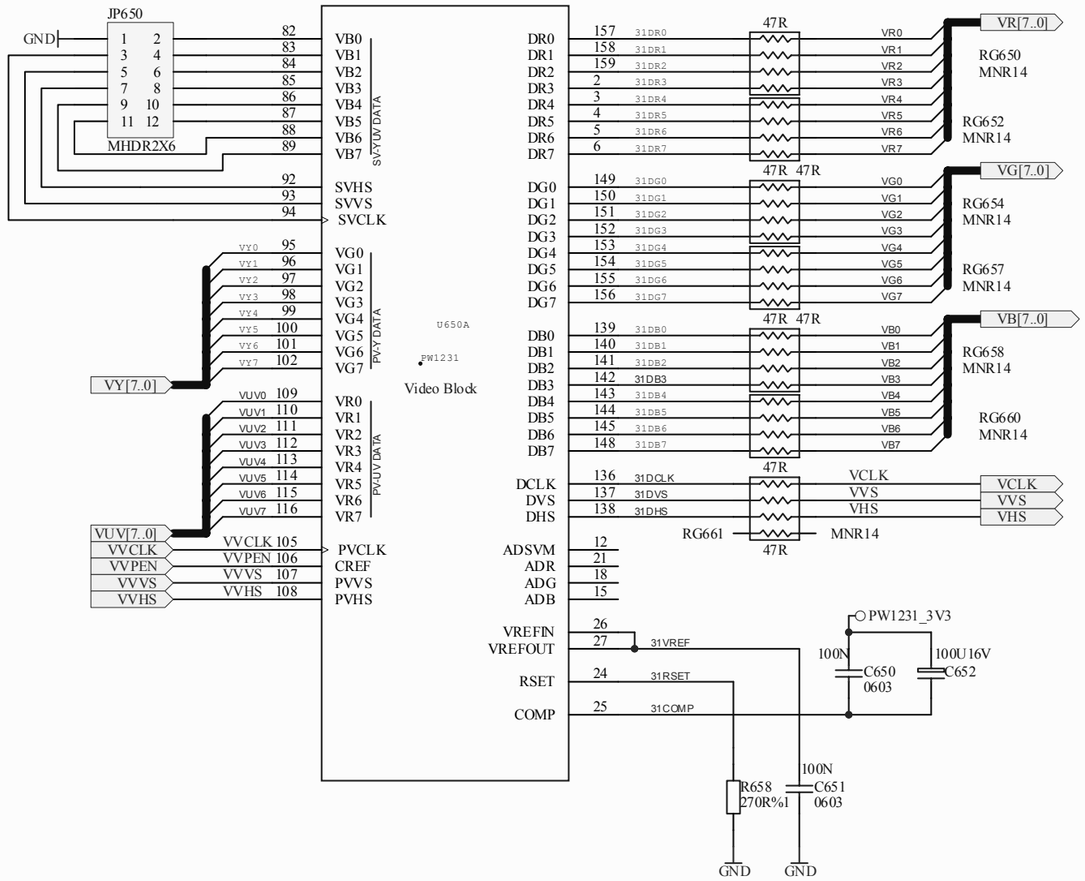
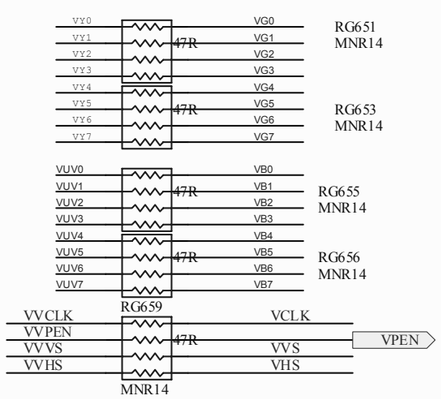
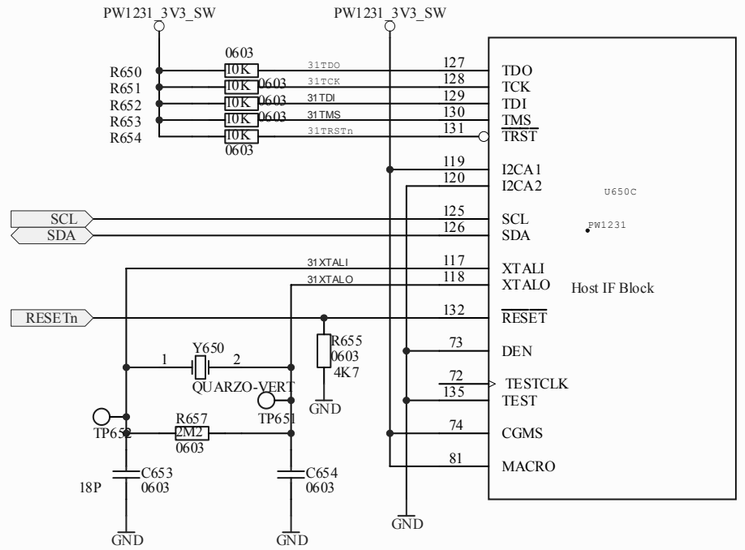
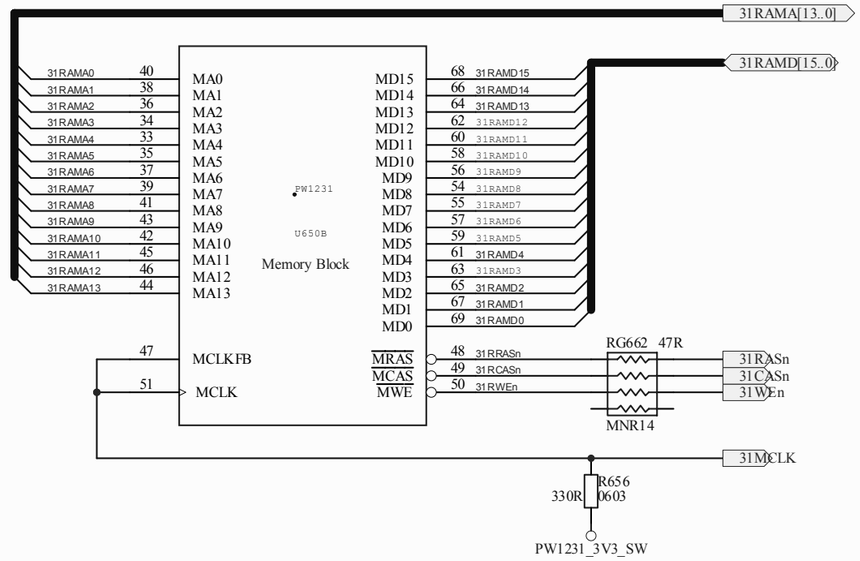
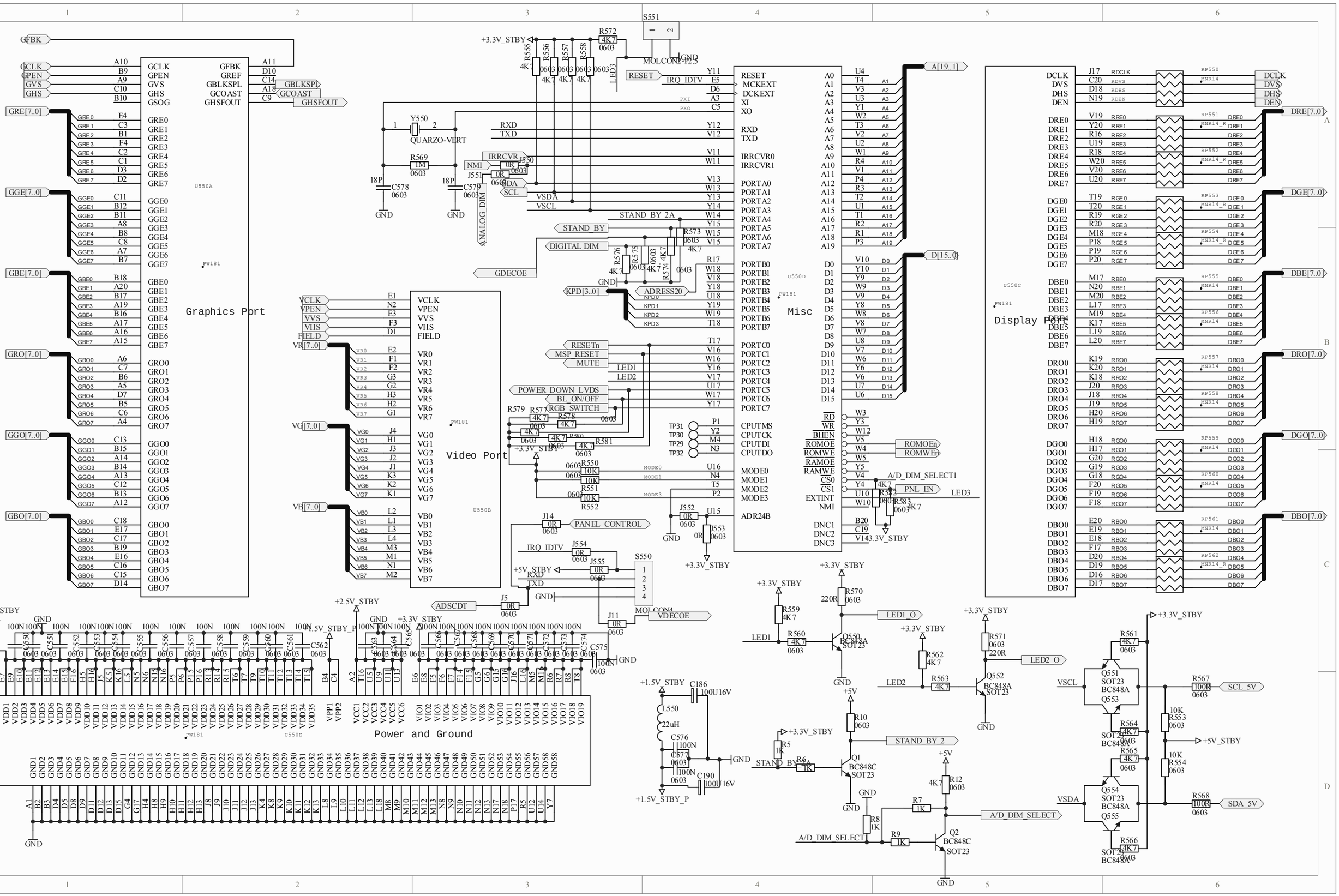
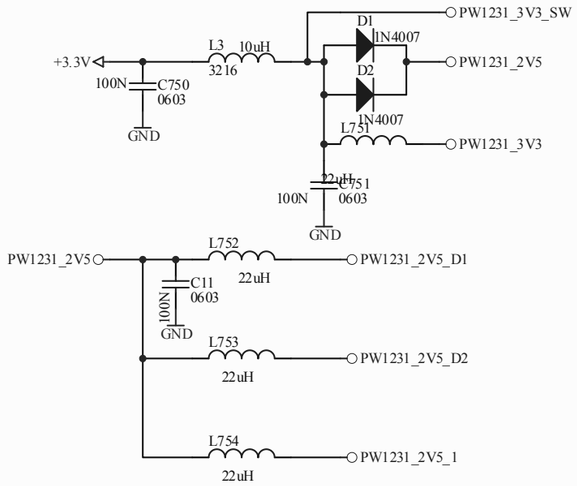

JP650
GND
MHDR2X6
VB0
VB1
VB2
VB3
VB4
VB5
VB6
VB7
SVHS
SVVS
SVCLK
VG0
VG1
VG2
VG3
VG4
VG5
VG6
VG7
VY[7..0]
VR0
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VUV[7..0]
PVCLK
CREF
PVVS
PVHS
VVCLK
VVPEN
VVVS
VVHS
U650A
PW1231
Video Block
DR0
DR1
DR2
DR3
DR4
DR5
DR6
DR7
DG0
DG1
DG2
DG3
DG4
DG5
DG6
DG7
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DCLK
DVS
DHS
ADSVM
ADR
ADG
ADB
VREFIN
VREFOUT
RSET
COMP
47R
VR[7..0]
VG[7..0]
VB[7..0]
RG650
RG652
RG654
RG657
RG658
RG660
RG661
MNR14
VCLK
VVS
VHS
31VREF
31RSET
31COMP
PW1231_3V3
100N
C650
0603
100U16V
C652
R658
270R%1
C651
PW1231_2V5_D1
PW1231_2V5_D2
PW1231_2V5_1
U650D
Power Block
VDD0
VDD1
VDD2
VDD3
PVDD0
PVDD1
PVDD2
PVDD3
PVDD4
PVDD5
PVDD6
DPAVDD
DPDVDD
MPAVDD
ADDVDD
ADAVDD
ADGVDD
AVD33B
AVD33G
AVD33R
AVD33SVM
VSS0
VSS1
VSS2
VSS3
PVSS0
PVSS1
PVSS2
PVSS3
PVSS4
PVSS5
PVSS6
DPAVSS
DPDVSS
MPAVSS
ADDVSS
ADAVSS
ADGVSS
AVS33B
AVS33G
AVS33R


RG651
MNR14
RG653
RG655
RG656
RG659
VVCLK
VVPEN
VVVS
VVHS
VCLK
VVS
VHS
VPEN
MNR14

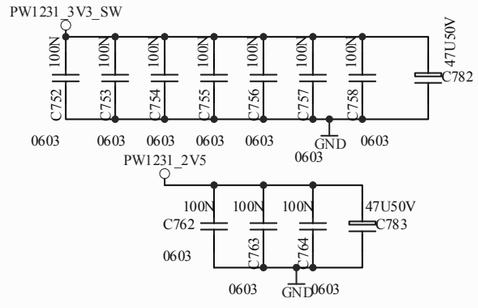

PW1231_3V3_SW
PW1231_3V3_SW
R650
R651
R652
R653
R654
10K
0603
31TDO
31TCK
31TDI
31TMS
31TRSTn
TDO
TCK
TDI
TMS
TRST
I2CA1
I2CA2
SCL
SDA
U650C
PW1231
Host IF Block
31XTALI
31XTALO
XTALI
XTALO
RESETn
RESET
DEN
TESTCLK
TEST
CGMS
MACRO
Y650
QUARZO-VERT
R655
4K7
TP651
GND
R657
2M2
TP652
C653
18P
C654

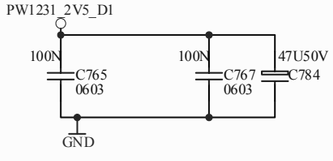

31RAMA[13..0]
31RAMD[15..0]
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
MA12
MA13
MCLKFB
MCLK
MD15
MD14
MD13
MD12
MD11
MD10
MD9
MD8
MD7
MD6
MD5
MD4
MD3
MD2
MD1
MD0
MRAS
MCAS
MWE
PW1231
U650B
Memory Block
31RRASn
31RCASn
31RWEn
RG662 47R
31RRASn
31RCASn
31RWEn
MNR14
31MCLK
R656
330R
0603
PW1231_3V3_SW

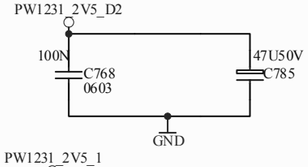

Graphics Port
U550A
Video Port
U550B
Misc
U550D
Display Port
U550C
Power and Ground
U550E
PW181
GFBK
GCLK
GPEN
GVS
GHS
GSOG
GREF
GBLKSPL
GCOAST
GHSFOUT
GRE[7..0]
GGE[7..0]
GBE[7..0]
GRO[7..0]
GGO[7..0]
GBO[7..0]
VCLK
VPEN
VVS
VHS
FIELD
VR[7..0]
VG[7..0]
VB[7..0]
+3.3V_STBY
RESET
IRQ_IDTV
PXI
PXO
Y550
QUARZO-VERT
RXD
TXD
IRRCVR
NMI
SDA
SCL
ANALOG_DIM
VSDA
VSCL
STAND_BY
STAND_BY 2A
DIGITAL DIM
GDECOE
KPD[3..0]
ADRESS20
RESETn
MSP_RESET
MUTE
LED1
LED2
POWER_DOWN_LVDS
BL_ON/OFF
RGB_SWITCH
MODE0
MODE1
MODE3
PANEL_CONTROL
S550
MOLCON4
VDECOE
ADSCDT
S551
MOLCON2-P2.5
A[19..1]
D[15..0]
RD
WR
BHEN
ROMOE
ROMWE
RAMOE
RAMWE
CS0
CS1
EXTINT
NMI
ADR24B
ROMOEn
ROMWEn
A/D_DIM_SELECT1
PNL_EN
LED3
DCLK
DVS
DHS
DEN
DRE[7..0]
DGE[7..0]
DBE[7..0]
DRO[7..0]
DGO[7..0]
DBO[7..0]
+1.5V_STBY
+2.5V_STBY
+1.5V_STBY_P
+5V_STBY
+5V
LED1_O
LED2_O
STAND_BY_2
A/D_DIM_SELECT
VSCL
VSDA
SCL_5V
SDA_5V
GND

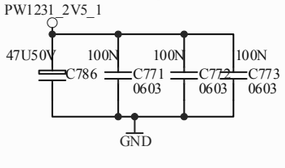

D1
1N4007
PW1231_3V3_SW
+3.3V
L3 10uH
3216
D2
PW1231_2V5
100N
C750
0603
1N4007
L751
PW1231_3V3
GND
22uH
100N
C751
0603
GND

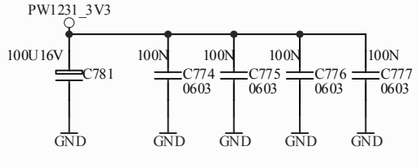
PW1231_2V5
L752
22uH
PW1231_2V5_D1
C11
0603
100N
GND
L753
PW1231_2V5_D2
22uH
L754
PW1231_2V5_1
22uH

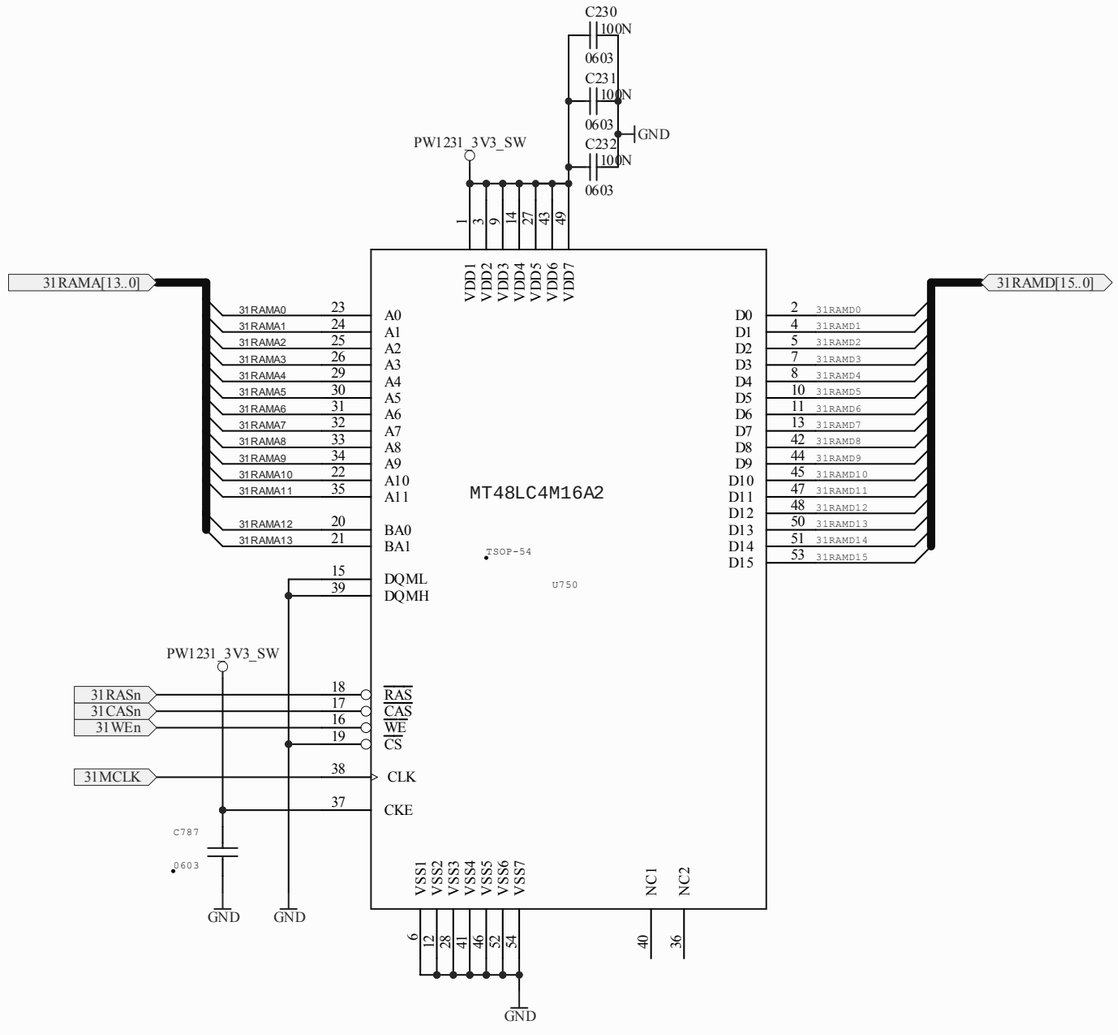

PW1231_3V3_SW
100N
C752
0603
100N
C753
0603
100N
C754
0603
100N
C755
0603
100N
C756
0603
100N
C757
0603
100N
C758
0603
47U50V
C782
GND
PW1231_2V5
100N
C762
0603
100N
C763
0603
100N
C764
0603
47U50V
C783
GND


PW1231_2V5_D1
100N
C765
0603
100N
C767
0603
47U50V
C784
GND


PW1231_2V5_D2
100N
C768
0603
47U50V
C785
GND


PW1231_2V5_1
47U50V
C786
100N
C771
0603
100N
C772
0603
100N
C773
0603
GND


PW1231_3V3
100U16V
C781
100N
C774
0603
100N
C775
0603
100N
C776
0603
100N
C777
0603
GND


C230
100N
0603
C231
100N
0603
C232
100N
0603
GND
PW1231_3V3_SW
VDD1
VDD2
VDD3
VDD4
VDD5
VDD6
VDD7
31RAMA[13..0]
31RAMA0
31RAMA1
31RAMA2
31RAMA3
31RAMA4
31RAMA5
31RAMA6
31RAMA7
31RAMA8
31RAMA9
31RAMA10
31RAMA11
31RAMA12
31RAMA13
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
BA0
BA1
MT48LC4M16A2
TSOP-54
U750
DQML
DQML
PW1231_3V3_SW
31RASn
31CASn
31WEn
31MCLK
RAS
CAS
WE
CS
CLK
CKE
C787
0603
GND
GND
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
31RAMD[15..0]
31RAMD0
31RAMD1
31RAMD2
31RAMD3
31RAMD4
31RAMD5
31RAMD6
31RAMD7
31RAMD8
31RAMD9
31RAMD10
31RAMD11
31RAMD12
31RAMD13
31RAMD14
31RAMD15
VSS1
VSS2
VSS3
VSS4
VSS5
VSS6
VSS7
NC1
NC2
GND

Tuner
Tuner.SCHDOC
QSS_MAIN
AM_SOUND
QSS_PIP
TELETEXT_CVBS
PIP_V
MAIN_V
+33V_IF
SCART2_CVBS_IN
SCART3_CVBS_IN
SCART1_CVBS_IN
SC1_V_OUT
SCART2_CVBS_OUT
SCART3_CVBS_OUT
+5V
+8V
SDA_5V
SCL_5V

msp
Audio.schdoc
QSS_MAIN
AM_SOUND
QSS_PIP
SDA_5V
SCL_5V
+5V
+8V
MSP_RESET
SWIN
MAIN_R
MAIN_L
SC1_AUDIO_IN_L
SC1_AUDIO_IN_R
SC3_AUDIO_IN_L
SC3_AUDIO_IN_R
SC2_AUDIO_IN_L
SC2_AUDIO_IN_R
SC3_AUDIO_OUT_L
SC3_AUDIO_OUT_R
SC2_AUDIO_OUT_L
SC2_AUDIO_OUT_R
SC1_OUT_L
SC1_OUT_R

switch
Audio_InOuts.SCHDOC
SCART2_CVBS_IN
SCART3_CVBS_IN
SCART1_CVBS_IN
SC1_V_OUT
SCART2_CVBS_OUT
SCART3_CVBS_OUT
RGB_SWITCH
KPD[3..0]
IRRCVR
LED2_O
LED1_O
SDA_5V
SCL_5V
+12V_AMP
+3.3V_STBY
+5V_STBY
+5V
AMP_SLEEP
SCART3_CHROMA
SCART_FB
SCART_BLUE
SCART_GREEN
SCART_RED
MUTE

saa7118-1
VIDECODER.schdoc
MAIN_V
SAA18PIP_VOUT
SAA18MAIN_VOUT
VVHS
VVVS
VVCLK
VUV[7..0]
VY[7..0]
VVPEN
SCART3_CHROMA
SCART_FB
SCART_BLUE
SCART_GREEN
SCART_RED
+3.3V
+5V
SCL
SDA
SA7118_3V3D1
SVHS_YIN
SVHS_CIN
VDECOE

dram 1231
SDRAM31.schdoc
+3.3V
31RAMA[13..0]
31RAMD[15..0]
31MCLK
31WEn
31CASn
31RASn
PW1231_3V3_SW
PW1231_2V5
PW1231_3V3
PW1231_2V5_D1
PW1231_2V5_D2
PW1231_2V5_1

deinterlacer
PW1231.schdoc
VVHS
VVVS
VVCLK
VUV[7..0]
VY[7..0]
VVPEN
SDA
SCL
VR[7..0]
VG[7..0]
VB[7..0]
VCLK
VVS
VHS
RESETn
VPEN

POWER
power.SCHDOC
+33V_IF
+8V
+5V
+12V_AMP
+3.3V_STBY
+5V_STBY
+3.3V
PANEL_POWER
PNL_EN
A/D_DIM_SELECT
BL_ON/OFF
DIGITAL_DIM
ANALOG_DIM
STAND_BY
STAND_BY_2

lvds
LVDSOUT.schdoc
DIGITAL_DIM_OUT
DIGITAL_DIM
PANEL_POWER
POWER_DOWN_LVDS
DCLK
DRE[7..0]
DGE[7..0]
DBE[7..0]
DHS
DVS
DEN
DRO[7..0]
DGO[7..0]
DBO[7..0]
PANEL_CONTROL

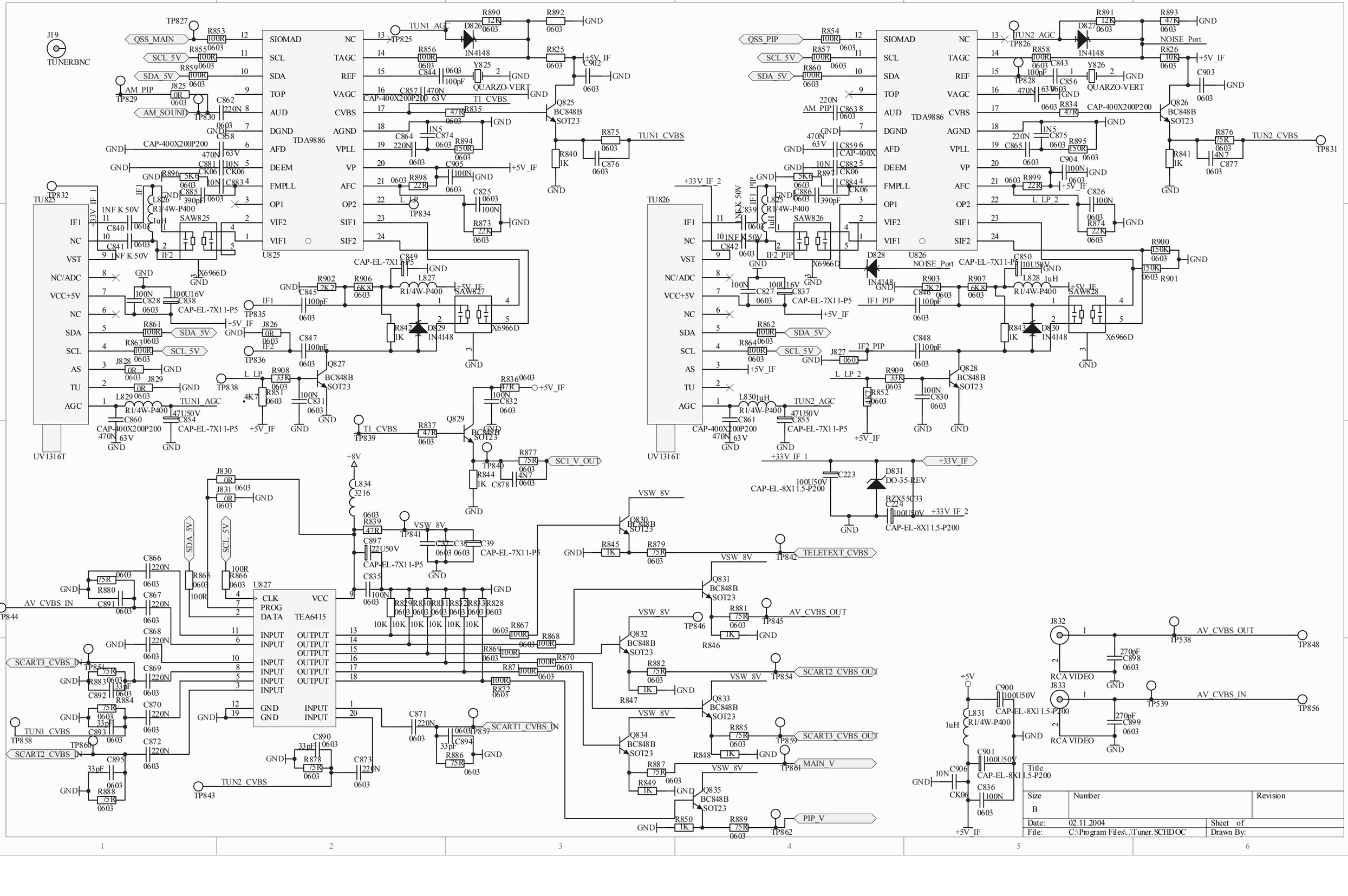
AD9887
AFE.schdoc
+5V
+3.3V
AD9887_A
SDA
SCL
GRE[7..0]
GRO[7..0]
GGO[7..0]
GBO[7..0]
ADSCDT
GFBK
GCLK
GDE[7..0]
GHS
GVS
GPEN
RXCm
RXCp
RXOp
RXOm
RX1p
RX1m
RX2p
RX2m
GBAIN
GGAIN
GRAIN
GVSYNC
GHSYNC
GCOAST
GBLKSPL

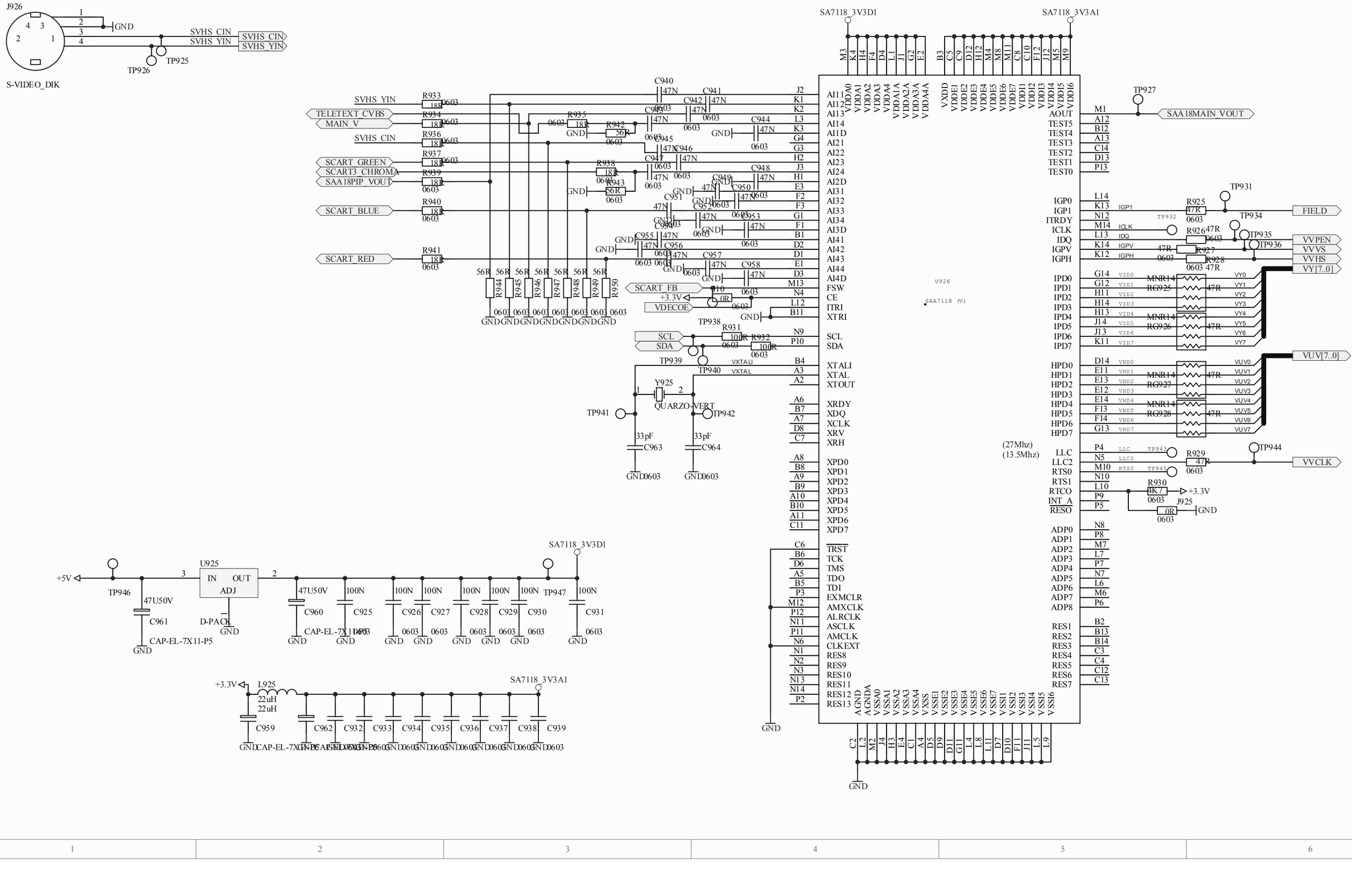
Controller
PW181.schdoc
MUTE
GRE[7..0]
GRO[7..0]
GGO[7..0]
GBO[7..0]
SCL_3V
SDA_5V
AMP_SLEEP
POWER_DOWN_LVDS
DCLK
DRE[7..0]
DGE[7..0]
DBE[7..0]
DHS
DVS
DEN
DRO[7..0]
DGO[7..0]
DBO[7..0]
ADSCDT
GFBK
STAND_BY_2
STAND_BY
ANALOG_DIM
DIGITAL DIM
BL_ON/OFF
A/D_DIM_SELECT
PNL_EN
GCOAST
GBLKSPL
LED1_O
LED2_O
IRRCVR
KPD[3..0]
RGB_SWITCH
MSP_RESET
GHSFOUT
VR[7..0]
VG[7..0]
VB[7..0]
VCLK
VVS
VHS
RESETn
PANEL_CONTROL
FIELD
VPEN
GBE[7..0]
GGE[7..0]
GHS
GVS
GPEN
GCLK
GDECOE
SDA
SCL
D[15..0]
ROMOEn
ROMWEn
ADRESS20
A[19..1]
RESET
NMI
JTAGRESET

pc-dvi
GCONNECTOR.schdoc
RXCm
RXCp
RXOp
RXOm
RX1p
RX1m
RX2p
RX2m
GBAIN
GGAIN
GRAIN
GVSYNC
GHSYNC
+5V
AD9887_A

saa7118-2
GDECODER.schdoc
SVHS_CIN
SVHS_YIN
SCART_FB
SCART_BLUE
SCART_GREEN
SA7118_3V3D1
SCART_RED
TELETEXT_CVBS
SAA18MAIN_VOUT
SAA18PIP_VOUT
PIP_V
SCART3_CHROMA
GBE[7..0]
GGE[7..0]
GHS
GVS
GPEN
GCLK
GDECOE
SCL
SDA

flash - emulator
MEMORY.schdoc
D[15..0]
ROMOEn
ROMWEn
ADRESS20
A[19..1]
RESET
NMI
JTAGRESET
SCL
SDA


TUNERBNC
TDA9886
U825
UV1316T
TU825
TU826
U827
TEA6415
SAW825
SAW826
SAW827
SAW828
X6966D
QUARZO-VERT
CAP-400X200P200
CAP-EL-7X11-P5
CAP-EL-8X11.5-P200
BC848B
SOT23
1N4148
DO-35-REV
BZX55C33
TUN1_AGC
TUN2_AGC
TUN1_CVBS
TUN2_CVBS
NOISE_Port
TELETEXT_CVBS
AV_CVBS_IN
AV_CVBS_OUT
SCART1_CVBS_IN
SCART2_CVBS_IN
SCART2_CVBS_OUT
SCART3_CVBS_IN
SCART3_CVBS_OUT
MAIN_V
PIP_V
SC1_V_OUT
QSS_MAIN
QSS_PIP
SCL_5V
SDA_5V
AM_PIP
AM_SOUND
IF1
IF2
IF1_PIP
IF2_PIP
L_LP
L_LP_2
VSW_8V
+8V
+5V_IF
+33V_IF
+33V_IF_1
+33V_IF_2
+5V
GND
RCA VIDEO
Title
Size
B
Number
Revision
Date: 02.11.2004
Sheet of
File: C:\Program Files\..\Tuner.SCHDOC
Drawn By:


J926
S-VIDEO_DIK
GND
SVHS_CIN
SVHS_YIN
TP925
TP926
SA7118_3V3D1
SA7118_3V3A1
U926
SAA7118 (V)
TP927
SAA18MAIN_VOUT
TP931
TP932
TP934
TP935
TP936
FIELD
VVPEN
VVVS
VVHS
VY[7..0]
VUV[7..0]
TP943
TP944
VVCLK
(27Mhz)
(13.5Mhz)
TP938
TP939
TP940
TP941
TP942
Y925
QUARZO-VERT
33pF
C963
C964
SCART_FB
VDECOE
SCL
SDA
TELETEXT_CVBS
MAIN_V
SCART_GREEN
SCART3_CHROMA
SAA18PIP_VOUT
SCART_BLUE
SCART_RED
TP946
TP947
U925
IN
OUT
ADJ
D-PACK
47U50V
C961
CAP-EL-7X11-P5
C960
C925
C926
C927
C928
C929
C930
C931
100N
+5V
+3.3V
L925
22uH
C959
C962
C932
C933
C934
C935
C936
C937
C938
C939